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(54) Title: SECRETORY MOLECULES

(57) **Abstract:** The present invention provides purified secretory polynucleotides (sptm). Also encompassed are the polypeptides (SPTM) encoded by sptm. The invention also provides for the use of sptm, or complements, oligonucleotides, or fragments thereof in diagnostic assays. The invention further provides for vectors and host cells containing sptm for the expression of SPTM. The invention additionally provides for the use of isolated and purified SPTM to induce antibodies and to screen libraries of compounds and the use of anti-SPTM antibodies in diagnostic assays. Also provided are microarrays containing sptm and methods of use.

WO 02/057304 A2

SECRETORY MOLECULES

TECHNICAL FIELD

The present invention relates to secretory molecules and to the use of these sequences in the diagnosis, study, prevention, and treatment of diseases associated with, as well as effects of exogenous compounds on, the expression of secretory molecules.

BACKGROUND OF THE INVENTION

Protein transport and secretion are essential for cellular function. Protein transport is mediated by a signal peptide located at the amino terminus of the protein to be transported or secreted. The signal peptide is comprised of about ten to twenty hydrophobic amino acids which target the nascent protein from the ribosome to a particular membrane bound compartment such as the endoplasmic reticulum (ER). Proteins targeted to the ER may either proceed through the secretory pathway or remain in any of the secretory organelles such as the ER, Golgi apparatus, or lysosomes. Proteins that transit through the secretory pathway are either secreted into the extracellular space or retained in the plasma membrane. Proteins that are retained in the plasma membrane contain one or more transmembrane domains, each comprised of about 20 hydrophobic amino acid residues. Proteins that are secreted from the cell are generally synthesized as inactive precursors that are activated by post-translational processing events during transit through the secretory pathway. Such events include glycosylation, proteolysis, and removal of the signal peptide by a signal peptidase. Other events that may occur during protein transport include chaperone-dependent unfolding and folding of the nascent protein and interaction of the protein with a receptor or pore complex. Examples of secretory proteins with amino terminal signal peptides are discussed below and include proteins with important roles in cell-to-cell signaling. Such proteins include transmembrane receptors and cell surface markers, extracellular matrix molecules, cytokines, hormones, growth and differentiation factors, neuropeptides, vasomediators, ion channels, transporters/pumps, and proteases. (Reviewed in Alberts, B. et al. (1994) Molecular Biology of The Cell, Garland Publishing, New York NY, pp. 557-560, 582-592.)

G-protein coupled receptors (GPCRs) comprise a superfamily of integral membrane proteins which transduce extracellular signals. Not all GPCRs contain N-terminal signal peptides. GPCRs include receptors for biogenic amines such as dopamine, epinephrine, histamine, glutamate (metabotropic-type), acetylcholine (muscarinic-type), and serotonin; for lipid mediators of inflammation such as prostaglandins, platelet activating factor, and leukotrienes; for peptide hormones such as calcitonin, C5a anaphylatoxin, follicle stimulating hormone, gonadotropin

releasing hormone, neurokinin, oxytocin, and thrombin; and for sensory signal mediators such as retinal photopigments and olfactory stimulatory molecules. The structure of these highly conserved receptors consists of seven hydrophobic transmembrane regions, cysteine disulfide bridges between the second and third extracellular loops, an extracellular N-terminus, and a cytoplasmic C-terminus. The N-terminus interacts with ligands, the disulfide bridges interact with agonists and antagonists, and the large third intracellular loop interacts with G proteins to activate second messengers such as cyclic AMP, phospholipase C, inositol triphosphate, or ion channels. (Reviewed in Watson, S. and Arkinstall, S. (1994) The G-protein Linked Receptor Facts Book, Academic Press, San Diego CA, pp. 2-6; and Bolander, F.F. (1994) Molecular Endocrinology, Academic Press, San Diego CA, pp. 162-176.)

Other types of receptors include cell surface antigens identified on leukocytic cells of the immune system. These antigens have been identified using systematic, monoclonal antibody (mAb)-based "shot gun" techniques. These techniques have resulted in the production of hundreds of mAbs directed against unknown cell surface leukocytic antigens. These antigens have been grouped into "clusters of differentiation" based on common immunocytochemical localization patterns in various differentiated and undifferentiated leukocytic cell types. Antigens in a given cluster are presumed to identify a single cell surface protein and are assigned a "cluster of differentiation" or "CD" designation. Some of the genes encoding proteins identified by CD antigens have been cloned and verified by standard molecular biology techniques. CD antigens have been characterized as both transmembrane proteins and cell surface proteins anchored to the plasma membrane via covalent attachment to fatty acid-containing glycolipids such as glycosylphosphatidylinositol (GPI). (Reviewed in Barclay, A.N. et al. (1995) The Leucocyte Antigen Facts Book, Academic Press, San Diego CA, pp. 17-20.)

Matrix proteins (MPs) are transmembrane and extracellular proteins which function in formation, growth, remodeling, and maintenance of tissues and as important mediators and regulators of the inflammatory response. The expression and balance of MPs may be perturbed by biochemical changes that result from congenital, epigenetic, or infectious diseases. In addition, MPs affect leukocyte migration, proliferation, differentiation, and activation in the immune response. MPs are frequently characterized by the presence of one or more domains which may include collagen-like domains, EGF-like domains, immunoglobulin-like domains, and fibronectin-like domains. In addition, MPs may be heavily glycosylated and may contain an Arginine-Glycine-Aspartate (RGD) tripeptide motif which may play a role in adhesive interactions. MPs include extracellular proteins such as fibronectin, collagen, galectin, vitronectin and its proteolytic derivative somatomedin B; and cell adhesion receptors such as cell adhesion molecules (CAMs), cadherins, and integrins. (Reviewed in Ayad, S. et al. (1994) The Extracellular Matrix Facts Book, Academic Press, San Diego CA, pp. 2-

16; Ruoslahti, E. (1997) Kidney Int. 51:1413-1417; Sjaastad, M.D. and Nelson, W.J. (1997) BioEssays 19:47-55.)

Cytokines are secreted by hematopoietic cells in response to injury or infection. Interleukins, neurotrophins, growth factors, interferons, and chemokines all define cytokine families that work in conjunction with cellular receptors to regulate cell proliferation and differentiation. In addition, cytokines effect activities such as leukocyte migration and function, hematopoietic cell proliferation, temperature regulation, acute response to infection, tissue remodeling, and apoptosis.

Chemokines, in particular, are small chemoattractant cytokines involved in inflammation, leukocyte proliferation and migration, angiogenesis and angiostasis, regulation of hematopoiesis, HIV infectivity, and stimulation of cytokine secretion. Chemokines generally contain 70-100 amino acids and are subdivided into four subfamilies based on the presence of conserved cysteine-based motifs. (Callard, R. and Gearing, A. (1994) The Cytokine Facts Book, Academic Press, New York NY, pp. 181-190, 210-213, 223-227.)

Growth and differentiation factors are secreted proteins which function in intercellular communication. Some factors require oligomerization or association with MPs for activity. Complex interactions among these factors and their receptors trigger intracellular signal transduction pathways that stimulate or inhibit cell division, cell differentiation, cell signaling, and cell motility. Most growth and differentiation factors act on cells in their local environment (paracrine signaling). There are three broad classes of growth and differentiation factors. The first class includes the large polypeptide growth factors such as epidermal growth factor, fibroblast growth factor, transforming growth factor, insulin-like growth factor, and platelet-derived growth factor. The second class includes the hematopoietic growth factors such as the colony stimulating factors (CSFs). Hematopoietic growth factors stimulate the proliferation and differentiation of blood cells such as B-lymphocytes, T-lymphocytes, erythrocytes, platelets, eosinophils, basophils, neutrophils, macrophages, and their stem cell precursors. The third class includes small peptide factors such as bombesin, vasopressin, oxytocin, endothelin, transferrin, angiotensin II, vasoactive intestinal peptide, and bradykinin which function as hormones to regulate cellular functions other than proliferation.

Growth and differentiation factors play critical roles in neoplastic transformation of cells in vitro and in tumor progression in vivo. Inappropriate expression of growth factors by tumor cells may contribute to vascularization and metastasis of tumors. During hematopoiesis, growth factor misregulation can result in anemias, leukemias, and lymphomas. Certain growth factors such as interferon are cytotoxic to tumor cells both in vivo and in vitro. Moreover, some growth factors and growth factor receptors are related both structurally and functionally to oncoproteins. In addition, growth factors affect transcriptional regulation of both proto-oncogenes and oncosuppressor genes. (Reviewed in Pimentel, E. (1994) Handbook of Growth Factors, CRC Press, Ann Arbor MI, pp. 1-9.)

Proteolytic enzymes or proteases either activate or deactivate proteins by hydrolyzing peptide bonds. Proteases are found in the cytosol, in membrane-bound compartments, and in the extracellular space. The major families are the zinc, serine, cysteine, thiol, and carboxyl proteases.

Ion channels, ion pumps, and transport proteins mediate the transport of molecules across cellular membranes. Transport can occur by a passive, concentration-dependent mechanism or can be linked to an energy source such as ATP hydrolysis. Symporters and antiporters transport ions and small molecules such as amino acids, glucose, and drugs. Symporters transport molecules and ions unidirectionally, and antiporters transport molecules and ions bidirectionally. Transporter superfamilies include facilitative transporters and active ATP-binding cassette transporters which are involved in multiple-drug resistance and the targeting of antigenic peptides to MHC Class I molecules. These transporters bind to a specific ion or other molecule and undergo a conformational change in order to transfer the ion or molecule across the membrane. (Reviewed in Alberts, B. et al. (1994) Molecular Biology of The Cell, Garland Publishing, New York NY, pp. 523-546.)

Ion channels are formed by transmembrane proteins which create a lined passageway across the membrane through which water and ions, such as Na^+, K^+, Ca^{2+}, and Cl^-, enter and exit the cell. For example, chloride channels are involved in the regulation of the membrane electric potential as well as absorption and secretion of ions across the membrane. Chloride channels also regulate the internal pH of membrane-bound organelles.

Ion pumps are ATPases which actively maintain membrane gradients. Ion pumps are classified as P, V, or F according to their structure and function. All have one or more binding sites for ATP in their cytosolic domains. The P-class ion pumps include Ca^{2+} ATPase and Na^+/K^+ ATPase and function in transporting H^+, Na^+, K^+, and Ca^{2+} ions. P-class pumps consist of two α and two β transmembrane subunits. The V- and F-class ion pumps have similar structures but transport only H^+. F class H^+ pumps mediate transport across the membranes of mitochondria and chloroplasts, while V-class H^+ pumps regulate acidity inside lysosomes, endosomes, and plant vacuoles.

A family of structurally related intrinsic membrane proteins known as facilitative glucose transporters catalyze the movement of glucose and other selected sugars across the plasma membrane. The proteins in this family contain a highly conserved, large transmembrane domain comprised of 12 α-helices, and several weakly conserved, cytoplasmic and exoplasmic domains. (Pessin, J.E. and Bell, G.I. (1992) Annu. Rev. Physiol. 54:911-930.)

Amino acid transport is mediated by Na^+ dependent amino acid transporters. These transporters are involved in gastrointestinal and renal uptake of dietary and cellular amino acids and in neuronal reuptake of neurotransmitters. Transport of cationic amino acids is mediated by the system y+ family and the cationic amino acid transporter (CAT) family. Members of the CAT family share a high degree of sequence homology, and each contains 12-14 putative transmembrane

domains. (Ito, K. and Groudine, M. (1997) J. Biol. Chem. 272:26780-26786.)

Hormones are secreted molecules that travel through the circulation and bind to specific receptors on the surface of, or within, target cells. Although they have diverse biochemical compositions and mechanisms of action, hormones can be grouped into two categories. One category includes small lipophilic hormones that diffuse through the plasma membrane of target cells, bind to cytosolic or nuclear receptors, and form a complex that alters gene expression. Examples of these molecules include retinoic acid, thyroxine, and the cholesterol-derived steroid hormones such as progesterone, estrogen, testosterone, cortisol, and aldosterone. The second category includes hydrophilic hormones that function by binding to cell surface receptors that transduce signals across the plasma membrane. Examples of such hormones include amino acid derivatives such as catecholamines and peptide hormones such as glucagon, insulin, gastrin, secretin, cholecystokinin, adrenocorticotropic hormone, follicle stimulating hormone, luteinizing hormone, thyroid stimulating hormone, and vasopressin. (See, for example, Lodish et al. (1995) Molecular Cell Biology, Scientific American Books Inc., New York NY, pp. 856-864.)

Neuropeptides and vasomediators (NP/VM) comprise a large family of endogenous signaling molecules. Included in this family are neuropeptides and neuropeptide hormones such as bombesin, neuropeptide Y, neurotensin, neuromedin N, melanocortins, opioids, galanin, somatostatin, tachykinins, urotensin II and related peptides involved in smooth muscle stimulation, vasopressin, vasoactive intestinal peptide, and circulatory system-borne signaling molecules such as angiotensin, complement, calcitonin, endothelins, formyl-methionyl peptides, glucagon, cholecystokinin and gastrin. NP/VMs can transduce signals directly, modulate the activity or release of other neurotransmitters and hormones, and act as catalytic enzymes in cascades. The effects of NP/VMs range from extremely brief to long-lasting. (Reviewed in Martin, C.R. et al. (1985) Endocrine Physiology, Oxford University Press, New York, NY, pp. 57-62.)

The discovery of new secretory molecules satisfies a need in the art by providing new compositions which are useful in the diagnosis, study, prevention, and treatment of diseases associated with, as well as effects of exogenous compounds on, cell signaling and the expression of secretory molecules.

SUMMARY OF THE INVENTION

The present invention relates to nucleic acid sequences comprising human polynucleotides encoding secretory polypeptides that contain signal peptides and/or transmembrane domains. These human polynucleotides (sptm) as presented in the Sequence Listing uniquely identify partial or full length genes encoding structural, functional, and regulatory polypeptides involved in cell signaling.

The invention provides an isolated polynucleotide selected from the group consisting of a) a

polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; b) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; c) a polynucleotide complementary to the polynucleotide of a); d) a polynucleotide complementary to the polynucleotide of b); and e) an RNA equivalent of a) through d). In one alternative, the polynucleotide comprises a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75. In another alternative, the polynucleotide comprises at least 30 contiguous nucleotides of a polynucleotide selected from the group consisting of a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; b) a polynucleotide comprising a naturally occurring polynucleotide comprising a polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; c) a polynucleotide complementary to the polynucleotide of a); d) a polynucleotide complementary to the polynucleotide of b); and e) an RNA equivalent of a) through d). In another alternative, the polynucleotide comprises at least 60 contiguous nucleotides of a polynucleotide selected from the group consisting of a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; b) a polynucleotide comprising a naturally occurring polynucleotide comprising a polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; c) a polynucleotide complementary to the polynucleotide of a); d) a polynucleotide complementary to the polynucleotide of b); and e) an RNA equivalent of a) through d). The invention further provides a composition for the detection of expression of secretory polynucleotides comprising at least one isolated polynucleotide comprising a polynucleotide selected from the group consisting of a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; b) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; c) a polynucleotide complementary to the polynucleotide of a); d) a polynucleotide complementary to the polynucleotide of b); and e) an RNA equivalent of a) through d); and a detectable label.

The invention also provides a method for detecting a target polynucleotide in a sample, said target polynucleotide having a polynucleotide sequence of a polyneucleotide selected from the group consisting of a) a polynucleotide comprising a polynucleotide sequence of a polynucleotide selected from the group consisting of SEQ ID NO:1-75; b) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; c) a polynucleotide complementary to the polynucleotide of a); d) a polynucleotide complementary to the polynucleotide of b); and e) an RNA equivalent of a) through d). The method comprises a) amplifying said target polynucleotide or fragment thereof using

polymerase chain reaction amplification, and b) detecting the presence or absence of said amplified target polynucleotide or fragment thereof, and, optionally, if present, the amount thereof.

The invention also provides a method for detecting a target polynucleotide in a sample, said target polynucleotide having a polynucleotide sequence of a polynucleotide selected from the group consisting of a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; b) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; c) a polynucleotide complementary to the polynucleotide of a); d) a polynucleotide complementary to the polynucleotide of b); and e) an RNA equivalent of a) through d). The method comprises a) hybridizing the sample with a probe comprising at least 20 contiguous nucleotides comprising a sequence complementary to said target polynucleotide in the sample, and which probe specifically hybridizes to said target polynucleotide, under conditions whereby a hybridization complex is formed between said probe and said target polynucleotide, and b) detecting the presence or absence of said hybridization complex, and, optionally, if present, the amount thereof. In one alternative, the invention provides a composition comprising a target polynucleotide of the method, wherein said probe comprises at least 30 contiguous nucleotides. In one alternative, the invention provides a composition comprising a target polynucleotide of the method, wherein said probe comprises at least 60 contiguous nucleotides.

The invention further provides a recombinant polynucleotide comprising a promoter sequence operably linked to an isolated polynucleotide selected from the group consisting of a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; b) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; c) a polynucleotide complementary to the polynucleotide of a); d) a polynucleotide complementary to the polynucleotide of b); and e) an RNA equivalent of a) through d). In one alternative, the invention provides a cell transformed with the recombinant polynucleotide. In another alternative, the invention provides a transgenic organism comprising the recombinant polynucleotide.

The invention also provides a method for producing a secretory polypeptide, the method comprising a) culturing a cell under conditions suitable for expression of the secretory polypeptide, wherein said cell is transformed with a recombinant polynucleotide, said recombinant polynucleotide comprising an isolated polynucleotide selected from the group consisting of i) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; ii) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; iii) a polynucleotide complementary to the polynucleotide of i); iv) a polynucleotide complementary to the polynucleotide

of ii); and v) an RNA equivalent of i) through iv), and b) recovering the secretory polypeptide so expressed. The invention additionally provides a method wherein the polypeptide has an amino acid sequence selected from the group consisting of SEQ ID NO:76-152.

The invention also provides an isolated secretory polypeptide (SPTM) encoded by at least one polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75. The invention further provides a method of screening for a test compound that specifically binds to the polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152. The method comprises a) combining the polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152 with at least one test compound under suitable conditions, and b) detecting binding of the polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152 to the test compound, thereby identifying a compound that specifically binds to the polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152.

The invention further provides a microarray wherein at least one element of the microarray is an isolated polynucleotide comprising at least 30 contiguous nucleotides of a polynucleotide selected from the group consisting of a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; b) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; c) a polynucleotide complementary to the polynucleotide of a); d) a polynucleotide complementary to the polynucleotide of b); and e) an RNA equivalent of a) through d). The invention also provides a method for generating a transcript image of a sample which contains polynucleotides. The method comprises a) labeling the polynucleotides of the sample, b) contacting the elements of the microarray with the labeled polynucleotides of the sample under conditions suitable for the formation of a hybridization complex, and c) quantifying the expression of the polynucleotides in the sample.

Additionally, the invention provides a method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a polynucleotide selected from the group consisting of a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; b) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; c) a polynucleotide complementary to the polynucleotide of a); d) a polynucleotide complementary to the polynucleotide of b); and e) an RNA equivalent of a) through d). The method comprises a) exposing a sample comprising the target polynucleotide to a compound, b) detecting altered expression of the target polynucleotide, and c) comparing the expression of the target polynucleotide in the presence of varying amounts of the

compound and in the absence of the compound.

The invention further provides a method for assessing toxicity of a test compound, said method comprising a) treating a biological sample containing nucleic acids with the test compound; b) hybridizing the nucleic acids of the treated biological sample with a probe comprising at least 20 contiguous nucleotides of a polynucleotide selected from the group consisting of i) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; ii) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; iii) a polynucleotide complementary to the polynucleotide of i); iv) a polynucleotide complementary to the polynucleotide of ii); and v) an RNA equivalent of i) through iv). Hybridization occurs under conditions whereby a specific hybridization complex is formed between said probe and a target polynucleotide in the biological sample, said target polynucleotide comprising a polynucleotide sequence of a polynucleotide selected from the group consisting of i) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; ii) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75; iii) a polynucleotide complementary to the polynucleotide of i); iv) a polynucleotide complementary to the polynucleotide of ii); and v) an RNA equivalent of i) through iv), and alternatively, the target polynucleotide comprises a polynucleotide sequence of a fragment of a polynucleotide selected from the group consisting of i-v above; c) quantifying the amount of hybridization complex; and d) comparing the amount of hybridization complex in the treated biological sample with the amount of hybridization complex in an untreated biological sample, wherein a difference in the amount of hybridization complex in the treated biological sample is indicative of toxicity of the test compound.

The invention further provides an isolated polypeptide selected from the group consisting of a) a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, b) a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, c) a biologically active fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, and d) an immunogenic fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152. In one alternative, the invention provides an isolated polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152.

The invention further provides an isolated polynucleotide encoding a polypeptide selected from the group consisting of a) a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, b) a polypeptide comprising a naturally occurring amino acid

sequence at least 90% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, c) a biologically active fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, and d) an immunogenic fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152. In one alternative, the polynucleotide encodes a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152. In another alternative, the polynucleotide comprises a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75.

Additionally, the invention provides an isolated antibody which specifically binds to a polypeptide selected from the group consisting of a) a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, b) a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, c) a biologically active fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, and d) an immunogenic fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152.

The invention further provides a composition comprising a polypeptide selected from the group consisting of a) a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, b) a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, c) a biologically active fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, and d) an immunogenic fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, and a pharmaceutically acceptable excipient. In one embodiment, the composition comprises a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152. The invention additionally provides a method of treating a disease or condition associated with decreased expression of functional SPTM, comprising administering to a patient in need of such treatment the composition.

The invention also provides a method for screening a compound for effectiveness as an agonist of a polypeptide selected from the group consisting of a) a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, b) a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, c) a biologically active fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, and d) an immunogenic fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152. The method comprises a) exposing a sample comprising the

polypeptide to a compound, and b) detecting agonist activity in the sample. In one alternative, the invention provides a composition comprising an agonist compound identified by the method and a pharmaceutically acceptable excipient. In another alternative, the invention provides a method of treating a disease or condition associated with decreased expression of functional SPTM, comprising administering to a patient in need of such treatment the composition.

Additionally, the invention provides a method for screening a compound for effectiveness as an antagonist of a polypeptide selected from the group consisting of a) a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, b) a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, c) a biologically active fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, and d) an immunogenic fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152. The method comprises a) exposing a sample comprising the polypeptide to a compound, and b) detecting antagonist activity in the sample. In one alternative, the invention provides a composition comprising an antagonist compound identified by the method and a pharmaceutically acceptable excipient. In another alternative, the invention provides a method of treating a disease or condition associated with overexpression of functional SPTM, comprising administering to a patient in need of such treatment the composition.

The invention further provides a method of screening for a compound that modulates the activity of a polypeptide selected from the group consisting of a) a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, b) a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, c) a biologically active fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, and d) an immunogenic fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152. The method comprises a) combining the polypeptide with at least one test compound under conditions permissive for the activity of the polypeptide, b) assessing the activity of the polypeptide in the presence of the test compound, and c) comparing the activity of the polypeptide in the presence of the test compound with the activity of the polypeptide in the absence of the test compound, wherein a change in the activity of the polypeptide in the presence of the test compound is indicative of a compound that modulates the activity of the polypeptide.

DESCRIPTION OF THE TABLES

Table 1 shows the sequence identification numbers (SEQ ID NO:s) and template identification numbers (template IDs) corresponding to the polynucleotides of the present invention,

along with the sequence identification numbers (SEQ ID NO:s) and open reading frame identification numbers (ORF IDs) corresponding to polypeptides encoded by the template ID.

Table 2 shows the sequence identification numbers (SEQ ID NO:s) and template identification numbers (template IDs) corresponding to the polynucleotides of the present invention, along with polynucleotide segments of each template sequence as defined by the indicated "start" and "stop" nucleotide positions. The reading frames of the polynucleotide segments are shown, and the polypeptides encoded by the polynucleotide segments constitute either signal peptide (SP) or transmembrane (TM) domains, as indicated. For TM domains, the membrane topology of the encoded polypeptide sequence is indicated as being transmembrane or on the cytosolic or non-cytosolic side of the cell membrane or organelle.

Table 3 shows the sequence identification numbers (SEQ ID NO:s) and template identification numbers (template IDs) corresponding to the polynucleotides of the present invention, along with component sequence identification numbers (component IDs) corresponding to each template. The component sequences, which were used to assemble the template sequences, are defined by the indicated "start" and "stop" nucleotide positions along each template.

Table 4 shows the tissue distribution profiles for the templates of the invention.

Table 5 shows the sequence identification numbers (SEQ ID NO:s) corresponding to the polypeptides of the present invention, along with the reading frames used to obtain the polypeptide segments, the lengths of the polypeptide segments, the "start" and "stop" nucleotide positions of the polynucleotide sequences used to define the encoded polypeptide segments, the GenBank hits (GI Numbers), probability scores, and functional annotations corresponding to the GenBank hits.

Table 6 summarizes the bioinformatics tools which are useful for analysis of the polynucleotides of the present invention. The first column of Table 6 lists analytical tools, programs, and algorithms, the second column provides brief descriptions thereof, the third column presents appropriate references, all of which are incorporated by reference herein in their entirety, and the fourth column presents, where applicable, the scores, probability values, and other parameters used to evaluate the strength of a match between two sequences (the higher the score, the greater the homology between two sequences).

DETAILED DESCRIPTION OF THE INVENTION

Before the nucleic acid sequences and methods are presented, it is to be understood that this invention is not limited to the particular machines, methods, and materials described. Although particular embodiments are described, machines, methods, and materials similar or equivalent to these embodiments may be used to practice the invention. The preferred machines, methods, and materials set forth are not intended to limit the scope of the invention which is limited only by the

appended claims.

The singular forms "a", "an", and "the" include plural reference unless the context clearly dictates otherwise. All technical and scientific terms have the meanings commonly understood by one of ordinary skill in the art. All publications are incorporated by reference for the purpose of describing and disclosing the cell lines, vectors, and methodologies which are presented and which might be used in connection with the invention. Nothing in the specification is to be construed as an admission that the invention is not entitled to antedate such disclosure by virtue of prior invention.

Definitions

As used herein, the lower case "sptm" refers to a nucleic acid sequence, while the upper case "SPTM" refers to an amino acid sequence encoded by sptm. A "full-length" sptm refers to a nucleic acid sequence containing the entire coding region of a gene endogenously expressed in human tissue.

"Adjuvants" are materials such as Freund's adjuvant, mineral gels (aluminum hydroxide), and surface active substances (lysolecithin, pluronic polyols, polyanions, peptides, oil emulsions, keyhole limpet hemocyanin, and dinitrophenol) which may be administered to increase a host's immunological response.

"Allele" refers to an alternative form of a nucleic acid sequence. Alleles result from a "mutation," a change or an alternative reading of the genetic code. Any given gene may have none, one, or many allelic forms. Mutations which give rise to alleles include deletions, additions, or substitutions of nucleotides. Each of these changes may occur alone, or in combination with the others, one or more times in a given nucleic acid sequence. The present invention encompasses allelic sptm.

An "allelic variant" is an alternative form of the gene encoding SPTM. Allelic variants may result from at least one mutation in the nucleic acid sequence and may result in altered mRNAs or in polypeptides whose structure or function may or may not be altered. A gene may have none, one, or many allelic variants of its naturally occurring form. Common mutational changes which give rise to allelic variants are generally ascribed to natural deletions, additions, or substitutions of nucleotides. Each of these types of changes may occur alone, or in combination with the others, one or more times in a given sequence.

"Altered" nucleic acid sequences encoding SPTM include those sequences with deletions, insertions, or substitutions of different nucleotides, resulting in a polypeptide the same as SPTM or a polypeptide with at least one functional characteristic of SPTM. Included within this definition are polymorphisms which may or may not be readily detectable using a particular oligonucleotide probe of the polynucleotide encoding SPTM, and improper or unexpected hybridization to allelic variants, with a locus other than the normal chromosomal locus for the polynucleotide sequence encoding

SPTM. The encoded protein may also be "altered," and may contain deletions, insertions, or substitutions of amino acid residues which produce a silent change and result in a functionally equivalent SPTM. Deliberate amino acid substitutions may be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity, and/or the amphipathic nature of the residues, as long as the biological or immunological activity of SPTM is retained. For example, negatively charged amino acids may include aspartic acid and glutamic acid, and positively charged amino acids may include lysine and arginine. Amino acids with uncharged polar side chains having similar hydrophilicity values may include: asparagine and glutamine; and serine and threonine. Amino acids with uncharged side chains having similar hydrophilicity values may include: leucine, isoleucine, and valine; glycine and alanine; and phenylalanine and tyrosine.

"Amino acid sequence" refers to a peptide, a polypeptide, or a protein of either natural or synthetic origin. The amino acid sequence is not limited to the complete, endogenous amino acid sequence and may be a fragment, epitope, variant, or derivative of a protein expressed by a nucleic acid sequence.

"Amplification" refers to the production of additional copies of a sequence and is carried out using polymerase chain reaction (PCR) technologies well known in the art.

"Antibody" refers to intact molecules as well as to fragments thereof, such as Fab, $F(ab')_2$, and Fv fragments, which are capable of binding the epitopic determinant. Antibodies that bind SPTM polypeptides can be prepared using intact polypeptides or using fragments containing small peptides of interest as the immunizing antigen. The polypeptide or peptide used to immunize an animal (e.g., a mouse, a rat, or a rabbit) can be derived from the translation of RNA, or synthesized chemically, and can be conjugated to a carrier protein if desired. Commonly used carriers that are chemically coupled to peptides include bovine serum albumin, thyroglobulin, and keyhole limpet hemocyanin (KLH). The coupled peptide is then used to immunize the animal.

The term "aptamer" refers to a nucleic acid or oligonucleotide molecule that binds to a specific molecular target. Aptamers are derived from an <u>in vitro</u> evolutionary process (e.g., SELEX (Systematic Evolution of Ligands by EXponential Enrichment), described in U.S. Patent No. 5,270,163), which selects for target-specific aptamer sequences from large combinatorial libraries. Aptamer compositions may be double-stranded or single-stranded, and may include deoxyribonucleotides, ribonucleotides, nucleotide derivatives, or other nucleotide-like molecules. The nucleotide components of an aptamer may have modified sugar groups (e.g., the 2'-OH group of a ribonucleotide may be replaced by 2'-F or 2'-NH_2), which may improve a desired property, e.g., resistance to nucleases or longer lifetime in blood. Aptamers may be conjugated to other molecules, e.g., a high molecular weight carrier to slow clearance of the aptamer from the circulatory system. Aptamers may be specifically cross-linked to their cognate ligands, e.g., by photo-activation of a

cross-linker. (See, e.g., Brody, E.N. and L. Gold (2000) J. Biotechnol. 74:5-13.)

The term "intramer" refers to an aptamer which is expressed in vivo. For example, a vaccinia virus-based RNA expression system has been used to express specific RNA aptamers at high levels in the cytoplasm of leukocytes (Blind, M. et al. (1999) Proc. Natl Acad. Sci. USA 96:3606-3610).

The term "spiegelmer" refers to an aptamer which includes L-DNA, L-RNA, or other left-handed nucleotide derivatives or nucleotide-like molecules. Aptamers containing left-handed nucleotides are resistant to degradation by naturally occurring enzymes, which normally act on substrates containing right-handed nucleotides.

"Antisense sequence" refers to a sequence capable of specifically hybridizing to a target sequence. The antisense sequence may include DNA, RNA, or any nucleic acid mimic or analog such as peptide nucleic acid (PNA); oligonucleotides having modified backbone linkages such as phosphorothioates, methylphosphonates, or benzylphosphonates; oligonucleotides having modified sugar groups such as 2'-methoxyethyl sugars or 2'-methoxyethoxy sugars; or oligonucleotides having modified base.

"Antisense technology" refers to any technology which relies on the specific hybridization of an antisense sequence to a target sequence.

A "bin" is a portion of computer memory space used by a computer program for storage of data, and bounded in such a manner that data stored in a bin may be retrieved by the program.

"Biologically active" refers to an amino acid sequence having a structural, regulatory, or biochemical function of a naturally occurring amino acid sequence.

"Clone joining" is a process for combining gene bins based upon the bins' containing sequence information from the same clone. The sequences may assemble into a primary gene transcript as well as one or more splice variants.

"Complementary" describes the relationship between two single-stranded nucleic acid sequences that anneal by base-pairing (5'-A-G-T-3' pairs with its complement 3'-T-C-A-5').

A "component sequence" is a nucleic acid sequence selected by a computer program such as PHRED and used to assemble a consensus or template sequence from one or more component sequences.

A "consensus sequence" or "template sequence" is a nucleic acid sequence which has been assembled from overlapping sequences, using a computer program for fragment assembly such as the GELVIEW fragment assembly system (Genetics Computer Group (GCG), Madison WI) or using a relational database management system (RDMS).

"Conservative amino acid substitutions" are those substitutions that, when made, least interfere with the properties of the original protein, i.e., the structure and especially the function of the protein is conserved and not significantly changed by such substitutions. The table below shows

amino acids which may be substituted for an original amino acid in a protein and which are regarded as conservative substitutions.

Original Residue	Conservative Substitution
Ala	Gly, Ser
Arg	His, Lys
Asn	Asp, Gln, His
Asp	Asn, Glu
Cys	Ala, Ser
Gln	Asn, Glu, His
Glu	Asp, Gln, His
Gly	Ala
His	Asn, Arg, Gln, Glu
Ile	Leu, Val
Leu	Ile, Val
Lys	Arg, Gln, Glu
Met	Leu, Ile
Phe	His, Met, Leu, Trp, Tyr
Ser	Cys, Thr
Thr	Ser, Val
Trp	Phe, Tyr
Tyr	His, Phe, Trp
Val	Ile, Leu, Thr

Conservative substitutions generally maintain (a) the structure of the polypeptide backbone in the area of the substitution, for example, as a beta sheet or alpha helical conformation, (b) the charge or hydrophobicity of the molecule at the target site, or (c) the bulk of the side chain.

"Deletion" refers to a change in either a nucleic or amino acid sequence in which at least one nucleotide or amino acid residue, respectively, is absent.

"Derivative" refers to the chemical modification of a nucleic acid sequence, such as by replacement of hydrogen by an alkyl, acyl, amino, hydroxyl, or other group.

"Differential expression" refers to increased or upregulated; or decreased, downregulated, or absent gene or protein expression, determined by comparing at least two different samples. Such comparisons may be carried out between, for example, a treated and an untreated sample, or a diseased and a normal sample.

The terms "element" and "array element" refer to a polynucleotide, polypeptide, or other chemical compound having a unique and defined position on a microarray.

The term "modulate" refers to a change in the activity of SPTM. For example, modulation may cause an increase or a decrease in protein activity, binding characteristics, or any other biological, functional, or immunological properties of SPTM.

"E-value" refers to the statistical probability that a match between two sequences occurred by chance.

"Exon shuffling" refers to the recombination of different coding regions (exons). Since an exon may represent a structural or functional domain of the encoded protein, new proteins may be assembled through the novel reassortment of stable substructures, thus allowing acceleration of the evolution of new protein functions.

A "fragment" is a unique portion of sptm or SPTM which is identical in sequence to but shorter in length than the parent sequence. A fragment may comprise up to the entire length of the defined sequence, minus one nucleotide/amino acid residue. For example, a fragment may comprise from 10 to 1000 contiguous amino acid residues or nucleotides. A fragment used as a probe, primer, antigen, therapeutic molecule, or for other purposes, may be at least 5, 10, 15, 16, 20, 25, 30, 40, 50, 60, 75, 100, 150, 250 or at least 500 contiguous amino acid residues or nucleotides in length. Fragments may be preferentially selected from certain regions of a molecule. For example, a polypeptide fragment may comprise a certain length of contiguous amino acids selected from the first 250 or 500 amino acids (or first 25% or 50%) of a polypeptide as shown in a certain defined sequence. Clearly these lengths are exemplary, and any length that is supported by the specification, including the Sequence Listing and the figures, may be encompassed by the present embodiments.

A fragment of sptm comprises a region of unique polynucleotide sequence that specifically identifies sptm, for example, as distinct from any other sequence in the same genome. A fragment of sptm is useful, for example, in hybridization and amplification technologies and in analogous methods that distinguish sptm from related polynucleotide sequences. The precise length of a fragment of sptm and the region of sptm to which the fragment corresponds are routinely determinable by one of ordinary skill in the art based on the intended purpose for the fragment.

A fragment of SPTM is encoded by a fragment of sptm. A fragment of SPTM comprises a region of unique amino acid sequence that specifically identifies SPTM. For example, a fragment of SPTM is useful as an immunogenic peptide for the development of antibodies that specifically recognize SPTM. The precise length of a fragment of SPTM and the region of SPTM to which the fragment corresponds are routinely determinable by one of ordinary skill in the art based on the intended purpose for the fragment.

A "full length" nucleotide sequence is one containing at least a start site for translation to a protein sequence, followed by an open reading frame and a stop site, and encoding a "full length" polypeptide.

"Hit" refers to a sequence whose annotation will be used to describe a given template. Criteria for selecting the top hit are as follows: if the template has one or more exact nucleic acid matches, the top hit is the exact match with highest percent identity. If the template has no exact

matches but has significant protein hits, the top hit is the protein hit with the lowest E-value. If the template has no significant protein hits, but does have significant non-exact nucleotide hits, the top hit is the nucleotide hit with the lowest E-value.

"Homology" refers to sequence similarity either between a reference nucleic acid sequence and at least a fragment of an sptm or between a reference amino acid sequence and a fragment of an SPTM.

"Hybridization" refers to the process by which a strand of nucleotides anneals with a complementary strand through base pairing. Specific hybridization is an indication that two nucleic acid sequences share a high degree of identity. Specific hybridization complexes form under defined annealing conditions, and remain hybridized after the "washing" step. The defined hybridization conditions include the annealing conditions and the washing step(s), the latter of which is particularly important in determining the stringency of the hybridization process, with more stringent conditions allowing less non-specific binding, i.e., binding between pairs of nucleic acid probes that are not perfectly matched. Permissive conditions for annealing of nucleic acid sequences are routinely determinable and may be consistent among hybridization experiments, whereas wash conditions may be varied among experiments to achieve the desired stringency.

Generally, stringency of hybridization is expressed with reference to the temperature under which the wash step is carried out. Generally, such wash temperatures are selected to be about 5°C to 20°C lower than the thermal melting point (T_m) for the specific sequence at a defined ionic strength and pH. The T_m is the temperature (under defined ionic strength and pH) at which 50% of the target sequence hybridizes to a perfectly matched probe. An equation for calculating T_m and conditions for nucleic acid hybridization is well known and can be found in Sambrook et al., 1989, Molecular Cloning: A Laboratory Manual, 2nd ed., vol. 1-3, Cold Spring Harbor Press, Plainview NY; specifically see volume 2, chapter 9.

High stringency conditions for hybridization between polynucleotides of the present invention include wash conditions of 68°C in the presence of about 0.2 x SSC and about 0.1% SDS, for 1 hour. Alternatively, temperatures of about 65°C, 60°C, or 55°C may be used. SSC concentration may be varied from about 0.2 to 2 x SSC, with SDS being present at about 0.1%. Typically, blocking reagents are used to block non-specific hybridization. Such blocking reagents include, for instance, denatured salmon sperm DNA at about 100-200 μg/ml. Useful variations on these conditions will be readily apparent to those skilled in the art. Hybridization, particularly under high stringency conditions, may be suggestive of evolutionary similarity between the nucleotides. Such similarity is strongly indicative of a similar role for the nucleotides and their resultant proteins.

Other parameters, such as temperature, salt concentration, and detergent concentration may be varied to achieve the desired stringency. Denaturants, such as formamide at a concentration of

about 35-50% v/v, may also be used under particular circumstances, such as RNA:DNA hybridizations. Appropriate hybridization conditions are routinely determinable by one of ordinary skill in the art.

"Immunologically active" or "immunogenic" describes the potential for a natural, recombinant, or synthetic peptide, epitope, polypeptide, or protein to induce antibody production in appropriate animals, cells, or cell lines.

"Immune response" can refer to conditions associated with inflammation, trauma, immune disorders, or infectious or genetic disease, etc. These conditions can be characterized by expression of various factors, e.g., cytokines, chemokines, and other signaling molecules, which may affect cellular and systemic defense systems.

An "immunogenic fragment" is a polypeptide or oligopeptide fragment of SPTM which is capable of eliciting an immune response when introduced into a living organism, for example, a mammal. The term "immunogenic fragment" also includes any polypeptide or oligopeptide fragment of SPTM which is useful in any of the antibody production methods disclosed herein or known in the art.

"Insertion" or "addition" refers to a change in either a nucleic or amino acid sequence in which at least one nucleotide or residue, respectively, is added to the sequence.

"Labeling" refers to the covalent or noncovalent joining of a polynucleotide, polypeptide, or antibody with a reporter molecule capable of producing a detectable or measurable signal.

"Microarray" is any arrangement of nucleic acids, amino acids, antibodies, etc., on a substrate. The substrate may be a solid support such as beads, glass, paper, nitrocellulose, nylon, or an appropriate membrane.

"Linkers" are short stretches of nucleotide sequence which may be added to a vector or an sptm to create restriction endonuclease sites to facilitate cloning. "Polylinkers" are engineered to incorporate multiple restriction enzyme sites and to provide for the use of enzymes which leave 5' or 3' overhangs (e.g., BamHI, EcoRI, and HindIII) and those which provide blunt ends (e.g., EcoRV, SnaBI, and StuI).

"Naturally occurring" refers to an endogenous polynucleotide or polypeptide that may be isolated from viruses or prokaryotic or eukaryotic cells.

"Nucleic acid sequence" refers to the specific order of nucleotides joined by phosphodiester bonds in a linear, polymeric arrangement. Depending on the number of nucleotides, the nucleic acid sequence can be considered an oligomer, oligonucleotide, or polynucleotide. The nucleic acid can be DNA, RNA, or any nucleic acid analog, such as PNA, may be of genomic or synthetic origin, may be either double-stranded or single-stranded, and can represent either the sense or antisense (complementary) strand.

"Oligomer" refers to a nucleic acid sequence of at least about 6 nucleotides and as many as about 60 nucleotides, preferably about 15 to 40 nucleotides, and most preferably between about 20 and 30 nucleotides, that may be used in hybridization or amplification technologies. Oligomers may be used as, e.g., primers for PCR, and are usually chemically synthesized.

"Operably linked" refers to the situation in which a first nucleic acid sequence is placed in a functional relationship with the second nucleic acid sequence. For instance, a promoter is operably linked to a coding sequence if the promoter affects the transcription or expression of the coding sequence. Generally, operably linked DNA sequences may be in close proximity or contiguous and, where necessary to join two protein coding regions, in the same reading frame.

"Peptide nucleic acid" (PNA) refers to a DNA mimic in which nucleotide bases are attached to a pseudopeptide backbone to increase stability. PNAs, also designated antigene agents, can prevent gene expression by targeting complementary messenger RNA.

The phrases "percent identity" and "% identity", as applied to polynucleotide sequences, refer to the percentage of residue matches between at least two polynucleotide sequences aligned using a standardized algorithm. Such an algorithm may insert, in a standardized and reproducible way, gaps in the sequences being compared in order to optimize alignment between two sequences, and therefore achieve a more meaningful comparison of the two sequences.

Percent identity between polynucleotide sequences may be determined using the default parameters of the CLUSTAL V algorithm as incorporated into the MEGALIGN version 3.12e sequence alignment program. This program is part of the LASERGENE software package, a suite of molecular biological analysis programs (DNASTAR, Madison WI). CLUSTAL V is described in Higgins, D.G. and Sharp, P.M. (1989) CABIOS 5:151-153 and in Higgins, D.G. et al. (1992) CABIOS 8:189-191. For pairwise alignments of polynucleotide sequences, the default parameters are set as follows: Ktuple=2, gap penalty=5, window=4, and "diagonals saved"=4. The "weighted" residue weight table is selected as the default. Percent identity is reported by CLUSTAL V as the "percent similarity" between aligned polynucleotide sequence pairs.

Alternatively, a suite of commonly used and freely available sequence comparison algorithms is provided by the National Center for Biotechnology Information (NCBI) Basic Local Alignment Search Tool (BLAST) (Altschul, S.F. et al. (1990) J. Mol. Biol. 215:403-410), which is available from several sources, including the NCBI, Bethesda, MD, and on the Internet at http://www.ncbi.nlm.nih.gov/BLAST/. The BLAST software suite includes various sequence analysis programs including "BLASTN," that is used to determine alignment between a known polynucleotide sequence and other sequences on a variety of databases. Also available is a tool called "BLAST 2 Sequences" that is used for direct pairwise comparison of two nucleotide sequences. "BLAST 2 Sequences" can be accessed and used interactively at

http://www.ncbi.nlm.nih.gov/gorf/bl2/. The "BLAST 2 Sequences" tool can be used for both BLASTN and BLASTP (discussed below). BLAST programs are commonly used with gap and other parameters set to default settings. For example, to compare two nucleotide sequences, one may use BLASTN with the "BLAST 2 Sequences" tool Version 2.0.9 (May-07-1999) set at default parameters. Such default parameters may be, for example:

Matrix: BLOSUM62

Reward for match: 1

Penalty for mismatch: -2

Open Gap: 5 and Extension Gap: 2 penalties

Gap x drop-off: 50

Expect: 10

Word Size: 11

Filter: on

Percent identity may be measured over the length of an entire defined sequence, for example, as defined by a particular SEQ ID number, or may be measured over a shorter length, for example, over the length of a fragment taken from a larger, defined sequence, for instance, a fragment of at least 20, at least 30, at least 40, at least 50, at least 70, at least 100, or at least 200 contiguous nucleotides. Such lengths are exemplary only, and it is understood that any fragment length supported by the sequences shown herein, in figures or Sequence Listings, may be used to describe a length over which percentage identity may be measured.

Nucleic acid sequences that do not show a high degree of identity may nevertheless encode similar amino acid sequences due to the degeneracy of the genetic code. It is understood that changes in nucleic acid sequence can be made using this degeneracy to produce multiple nucleic acid sequences that all encode substantially the same protein.

The phrases "percent identity" and "% identity", as applied to polypeptide sequences, refer to the percentage of residue matches between at least two polypeptide sequences aligned using a standardized algorithm. Methods of polypeptide sequence alignment are well-known. Some alignment methods take into account conservative amino acid substitutions. Such conservative substitutions, explained in more detail above, generally preserve the hydrophobicity and acidity of the substituted residue, thus preserving the structure (and therefore function) of the folded polypeptide.

Percent identity between polypeptide sequences may be determined using the default parameters of the CLUSTAL V algorithm as incorporated into the MEGALIGN version 3.12e sequence alignment program (described and referenced above). For pairwise alignments of polypeptide sequences using CLUSTAL V, the default parameters are set as follows: Ktuple=1, gap penalty=3, window=5, and "diagonals saved"=5. The PAM250 matrix is selected as the default

residue weight table. As with polynucleotide alignments, the percent identity is reported by CLUSTAL V as the "percent similarity" between aligned polypeptide sequence pairs.

Alternatively the NCBI BLAST software suite may be used. For example, for a pairwise comparison of two polypeptide sequences, one may use the "BLAST 2 Sequences" tool Version 2.0.9 (May-07-1999) with BLASTP set at default parameters. Such default parameters may be, for example:

Matrix: BLOSUM62

Open Gap: 11 and Extension Gap: 1 penalty

Gap x drop-off: 50

Expect: 10

Word Size: 3

Filter: on

Percent identity may be measured over the length of an entire defined polypeptide sequence, for example, as defined by a particular SEQ ID number, or may be measured over a shorter length, for example, over the length of a fragment taken from a larger, defined polypeptide sequence, for instance, a fragment of at least 15, at least 20, at least 30, at least 40, at least 50, at least 70 or at least 150 contiguous residues. Such lengths are exemplary only, and it is understood that any fragment length supported by the sequences shown herein, in figures or Sequence Listings, may be used to describe a length over which percentage identity may be measured.

"Post-translational modification" of an SPTM may involve lipidation, glycosylation, phosphorylation, acetylation, racemization, proteolytic cleavage, and other modifications known in the art. These processes may occur synthetically or biochemically. Biochemical modifications will vary by cell type depending on the enzymatic milieu and the SPTM.

"Probe" refers to sptm or fragments thereof, which are used to detect identical, allelic or related nucleic acid sequences. Probes are isolated oligonucleotides or polynucleotides attached to a detectable label or reporter molecule. Typical labels include radioactive isotopes, ligands, chemiluminescent agents, and enzymes. "Primers" are short nucleic acids, usually DNA oligonucleotides, which may be annealed to a target polynucleotide by complementary base-pairing. The primer may then be extended along the target DNA strand by a DNA polymerase enzyme. Primer pairs can be used for amplification (and identification) of a nucleic acid sequence, e.g., by the polymerase chain reaction (PCR).

Probes and primers as used in the present invention typically comprise at least 15 contiguous nucleotides of a known sequence. In order to enhance specificity, longer probes and primers may also be employed, such as probes and primers that comprise at least 20, 30, 40, 50, 60, 70, 80, 90, 100, or at least 150 consecutive nucleotides of the disclosed nucleic acid sequences. Probes and primers may

be considerably longer than these examples, and it is understood that any length supported by the specification, including the figures and Sequence Listing, may be used.

Methods for preparing and using probes and primers are described in the references, for example Sambrook et al., 1989, Molecular Cloning: A Laboratory Manual, 2nd ed., vol. 1-3, Cold Spring Harbor Press, Plainview NY; Ausubel et al.,1987, Current Protocols in Molecular Biology, Greene Publ. Assoc. & Wiley-Intersciences, New York NY; Innis et al., 1990, PCR Protocols, A Guide to Methods and Applications, Academic Press, San Diego CA. PCR primer pairs can be derived from a known sequence, for example, by using computer programs intended for that purpose such as Primer (Version 0.5, 1991, Whitehead Institute for Biomedical Research, Cambridge MA).

Oligonucleotides for use as primers are selected using software known in the art for such purpose. For example, OLIGO 4.06 software is useful for the selection of PCR primer pairs of up to 100 nucleotides each, and for the analysis of oligonucleotides and larger polynucleotides of up to 5,000 nucleotides from an input polynucleotide sequence of up to 32 kilobases. Similar primer selection programs have incorporated additional features for expanded capabilities. For example, the PrimOU primer selection program (available to the public from the Genome Center at University of Texas South West Medical Center, Dallas TX) is capable of choosing specific primers from megabase sequences and is thus useful for designing primers on a genome-wide scope. The Primer3 primer selection program (available to the public from the Whitehead Institute/MIT Center for Genome Research, Cambridge MA) allows the user to input a "mispriming library," in which sequences to avoid as primer binding sites are user-specified. Primer3 is useful, in particular, for the selection of oligonucleotides for microarrays. (The source code for the latter two primer selection programs may also be obtained from their respective sources and modified to meet the user's specific needs.) The PrimeGen program (available to the public from the UK Human Genome Mapping Project Resource Centre, Cambridge UK) designs primers based on multiple sequence alignments, thereby allowing selection of primers that hybridize to either the most conserved or least conserved regions of aligned nucleic acid sequences. Hence, this program is useful for identification of both unique and conserved oligonucleotides and polynucleotide fragments. The oligonucleotides and polynucleotide fragments identified by any of the above selection methods are useful in hybridization technologies, for example, as PCR or sequencing primers, microarray elements, or specific probes to identify fully or partially complementary polynucleotides in a sample of nucleic acids. Methods of oligonucleotide selection are not limited to those described above.

"Purified" refers to molecules, either polynucleotides or polypeptides that are isolated or separated from their natural environment and are at least 60% free, preferably at least 75% free, and most preferably at least 90% free from other compounds with which they are naturally associated.

A "recombinant nucleic acid" is a sequence that is not naturally occurring or has a sequence that is made by an artificial combination of two or more otherwise separated segments of sequence. This artificial combination is often accomplished by chemical synthesis or, more commonly, by the artificial manipulation of isolated segments of nucleic acids, e.g., by genetic engineering techniques such as those described in Sambrook, supra. The term recombinant includes nucleic acids that have been altered solely by addition, substitution, or deletion of a portion of the nucleic acid. Frequently, a recombinant nucleic acid may include a nucleic acid sequence operably linked to a promoter sequence. Such a recombinant nucleic acid may be part of a vector that is used, for example, to transform a cell.

Alternatively, such recombinant nucleic acids may be part of a viral vector, e.g., based on a vaccinia virus, that could be use to vaccinate a mammal wherein the recombinant nucleic acid is expressed, inducing a protective immunological response in the mammal.

"Regulatory element" refers to a nucleic acid sequence from nontranslated regions of a gene, and includes enhancers, promoters, introns, and 3' untranslated regions, which interact with host proteins to carry out or regulate transcription or translation.

"Reporter" molecules are chemical or biochemical moieties used for labeling a nucleic acid, an amino acid, or an antibody. They include radionuclides; enzymes; fluorescent, chemiluminescent, or chromogenic agents; substrates; cofactors; inhibitors; magnetic particles; and other moieties known in the art.

An "RNA equivalent," in reference to a DNA sequence, is composed of the same linear sequence of nucleotides as the reference DNA sequence with the exception that all occurrences of the nitrogenous base thymine are replaced with uracil, and the sugar backbone is composed of ribose instead of deoxyribose.

"Sample" is used in its broadest sense. Samples may contain nucleic or amino acids, antibodies, or other materials, and may be derived from any source (e.g., bodily fluids including, but not limited to, saliva, blood, and urine; chromosome(s), organelles, or membranes isolated from a cell; genomic DNA, RNA, or cDNA in solution or bound to a substrate; and cleared cells or tissues or blots or imprints from such cells or tissues).

"Specific binding" or "specifically binding" refers to the interaction between a protein or peptide and its agonist, antibody, antagonist, or other binding partner. The interaction is dependent upon the presence of a particular structure of the protein, e.g., the antigenic determinant or epitope, recognized by the binding molecule. For example, if an antibody is specific for epitope "A," the presence of a polypeptide containing epitope A, or the presence of free unlabeled A, in a reaction containing free labeled A and the antibody will reduce the amount of labeled A that binds to the antibody.

"Substitution" refers to the replacement of at least one nucleotide or amino acid by a different nucleotide or amino acid.

"Substrate" refers to any suitable rigid or semi-rigid support including, e.g., membranes, filters, chips, slides, wafers, fibers, magnetic or nonmagnetic beads, gels, tubing, plates, polymers, microparticles or capillaries. The substrate can have a variety of surface forms, such as wells, trenches, pins, channels and pores, to which polynucleotides or polypeptides are bound.

A "transcript image" refers to the collective pattern of gene expression by a particular tissue or cell type under given conditions at a given time.

"Transformation" refers to a process by which exogenous DNA enters a recipient cell. Transformation may occur under natural or artificial conditions using various methods well known in the art. Transformation may rely on any known method for the insertion of foreign nucleic acid sequences into a prokaryotic or eukaryotic host cell. The method is selected based on the host cell being transformed.

"Transformants" include stably transformed cells in which the inserted DNA is capable of replication either as an autonomously replicating plasmid or as part of the host chromosome, as well as cells which transiently express inserted DNA or RNA.

A "transgenic organism," as used herein, is any organism, including but not limited to animals and plants, in which one or more of the cells of the organism contains heterologous nucleic acid introduced by way of human intervention, such as by transgenic techniques well known in the art. The nucleic acid is introduced into the cell, directly or indirectly by introduction into a precursor of the cell, by way of deliberate genetic manipulation, such as by microinjection or by infection with a recombinant virus. The term genetic manipulation does not include classical cross-breeding, or <u>in vitro</u> fertilization, but rather is directed to the introduction of a recombinant DNA molecule. The transgenic organisms contemplated in accordance with the present invention include bacteria, cyanobacteria, fungi, and plants and animals. The isolated DNA of the present invention can be introduced into the host by methods known in the art, for example infection, transfection, transformation or transconjugation. Techniques for transferring the DNA of the present invention into such organisms are widely known and provided in references such as Sambrook et al. (1989), <u>supra</u>.

A "variant" of a particular nucleic acid sequence is defined as a nucleic acid sequence having at least 25% sequence identity to the particular nucleic acid sequence over a certain length of one of the nucleic acid sequences using BLASTN with the "BLAST 2 Sequences" tool Version 2.0.9 (May-07-1999) set at default parameters. Such a pair of nucleic acids may show, for example, at least 30%, at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% or greater

sequence identity over a certain defined length. The variant may result in "conservative" amino acid changes which do not affect structural and/or chemical properties. A variant may be described as, for example, an "allelic" (as defined above), "splice," "species," or "polymorphic" variant. A splice variant may have significant identity to a reference molecule, but will generally have a greater or lesser number of polynucleotides due to alternate splicing of exons during mRNA processing. The corresponding polypeptide may possess additional functional domains or lack domains that are present in the reference molecule. Species variants are polynucleotide sequences that vary from one species to another. The resulting polypeptides generally will have significant amino acid identity relative to each other. A polymorphic variant is a variation in the polynucleotide sequence of a particular gene between individuals of a given species. Polymorphic variants also may encompass "single nucleotide polymorphisms" (SNPs) in which the polynucleotide sequence varies by one base. The presence of SNPs may be indicative of, for example, a certain population, a disease state, or a propensity for a disease state.

In an alternative, variants of the polynucleotides of the present invention may be generated through recombinant methods. One possible method is a DNA shuffling technique such as MOLECULARBREEDING (Maxygen Inc., Santa Clara CA; described in U.S. Patent Number 5,837,458; Chang, C.-C. et al. (1999) Nat. Biotechnol. 17:793-797; Christians, F.C. et al. (1999) Nat. Biotechnol. 17:259-264; and Crameri, A. et al. (1996) Nat. Biotechnol. 14:315-319) to alter or improve the biological properties of SPTM, such as its biological or enzymatic activity or its ability to bind to other molecules or compounds. DNA shuffling is a process by which a library of gene variants is produced using PCR-mediated recombination of gene fragments. The library is then subjected to selection or screening procedures that identify those gene variants with the desired properties. These preferred variants may then be pooled and further subjected to recursive rounds of DNA shuffling and selection/screening. Thus, genetic diversity is created through "artificial" breeding and rapid molecular evolution. For example, fragments of a single gene containing random point mutations may be recombined, screened, and then reshuffled until the desired properties are optimized. Alternatively, fragments of a given gene may be recombined with fragments of homologous genes in the same gene family, either from the same or different species, thereby maximizing the genetic diversity of multiple naturally occurring genes in a directed and controllable manner.

A "variant" of a particular polypeptide sequence is defined as a polypeptide sequence having at least 40% sequence identity to the particular polypeptide sequence over a certain length of one of the polypeptide sequences using BLASTP with the "BLAST 2 Sequences" tool Version 2.0.9 (May-07-1999) set at default parameters. Such a pair of polypeptides may show, for example, at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, at least 91%, at least 92%, at least 93%, at least

94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% or greater sequence identity over a certain defined length of one of the polypeptides.

THE INVENTION

In a particular embodiment, cDNA sequences derived from human tissues and cell lines were aligned based on nucleotide sequence identity and assembled into "consensus" or "template" sequences which are designated by the template identification numbers (template IDs) in column 2 of Table 2. The sequence identification numbers (SEQ ID NO:s) corresponding to the template IDs are shown in column 1. Segments of the template sequences are defined by the "start" and "stop" nucleotide positions listed in columns 3 and 4. These segments, when translated in the reading frames indicated in column 5, have similarity to signal peptide (SP) or transmembrane (TM) domain consensus sequences, as indicated in column 6.

The invention incorporates the nucleic acid sequences of these templates as disclosed in the Sequence Listing and the use of these sequences in the diagnosis and treatment of disease states characterized by defects in cell signaling. The invention further utilizes these sequences in hybridization and amplification technologies, and in particular, in technologies which assess gene expression patterns correlated with specific cells or tissues and their responses in vivo or in vitro to pharmaceutical agents, toxins, and other treatments. In this manner, the sequences of the present invention are used to develop a transcript image for a particular cell or tissue.

Derivation of Nucleic Acid Sequences

cDNA was isolated from libraries constructed using RNA derived from normal and diseased human tissues and cell lines. The human tissues and cell lines used for cDNA library construction were selected from a broad range of sources to provide a diverse population of cDNAs representative of gene transcription throughout the human body. Descriptions of the human tissues and cell lines used for cDNA library construction are provided in the LIFESEQ database (Incyte Genomics, Inc. (Incyte), Palo Alto CA). Human tissues were broadly selected from, for example, cardiovascular, dermatologic, endocrine, gastrointestinal, hematopoietic/immune system, musculoskeletal, neural, reproductive, and urologic sources.

Cell lines used for cDNA library construction were derived from, for example, leukemic cells, teratocarcinomas, neuroepitheliomas, cervical carcinoma, lung fibroblasts, and endothelial cells. Such cell lines include, for example, THP-1, Jurkat, HUVEC, hNT2, WI38, HeLa, and other cell lines commonly used and available from public depositories (American Type Culture Collection, Manassas VA). Prior to mRNA isolation, cell lines were untreated, treated with a pharmaceutical agent such as 5'-aza-2'-deoxycytidine, treated with an activating agent such as lipopolysaccharide in

the case of leukocytic cell lines, or, in the case of endothelial cell lines, subjected to shear stress.

Sequencing of the cDNAs

Methods for DNA sequencing are well known in the art. Conventional enzymatic methods employ the Klenow fragment of DNA polymerase I, SEQUENASE DNA polymerase (U.S. Biochemical Corporation, Cleveland OH), Taq polymerase (Applied Biosystems, Foster City CA), thermostable T7 polymerase (Amersham Pharmacia Biotech, Inc. (Amersham Pharmacia Biotech), Piscataway NJ), or combinations of polymerases and proofreading exonucleases such as those found in the ELONGASE amplification system (Life Technologies Inc. (Life Technologies), Gaithersburg MD), to extend the nucleic acid sequence from an oligonucleotide primer annealed to the DNA template of interest. Methods have been developed for the use of both single-stranded and double-stranded templates. Chain termination reaction products may be electrophoresed on urea-polyacrylamide gels and detected either by autoradiography (for radioisotope-labeled nucleotides) or by fluorescence (for fluorophore-labeled nucleotides). Automated methods for mechanized reaction preparation, sequencing, and analysis using fluorescence detection methods have been developed. Machines used to prepare cDNAs for sequencing can include the MICROLAB 2200 liquid transfer system (Hamilton Company (Hamilton), Reno NV), Peltier thermal cycler (PTC200; MJ Research, Inc. (MJ Research), Watertown MA), and ABI CATALYST 800 thermal cycler (Applied Biosystems). Sequencing can be carried out using, for example, the ABI 373 or 377 (Applied Biosystems) or MEGABACE 1000 (Molecular Dynamics, Inc. (Molecular Dynamics), Sunnyvale CA) DNA sequencing systems, or other automated and manual sequencing systems well known in the art.

The nucleotide sequences of the Sequence Listing have been prepared by current, state-of-the-art, automated methods and, as such, may contain occasional sequencing errors or unidentified nucleotides. Such unidentified nucleotides are designated by an N. These infrequent unidentified bases do not represent a hindrance to practicing the invention for those skilled in the art. Several methods employing standard recombinant techniques may be used to correct errors and complete the missing sequence information. (See, e.g., those described in Ausubel, F.M. et al. (1997) Short Protocols in Molecular Biology, John Wiley & Sons, New York NY; and Sambrook, J. et al. (1989) Molecular Cloning, A Laboratory Manual, Cold Spring Harbor Press, Plainview NY.)

Assembly of cDNA Sequences

Human polynucleotide sequences may be assembled using programs or algorithms well known in the art. Sequences to be assembled are related, wholly or in part, and may be derived from a single or many different transcripts. Assembly of the sequences can be performed using such

programs as PHRAP (Phils Revised Assembly Program) and the GELVIEW fragment assembly system (GCG), or other methods known in the art.

Alternatively, cDNA sequences are used as "component" sequences that are assembled into "template" or "consensus" sequences as follows. Sequence chromatograms are processed, verified, and quality scores are obtained using PHRED. Raw sequences are edited using an editing pathway known as Block 1 (See, e.g., the LIFESEQ Assembled User Guide, Incyte Genomics, Palo Alto, CA). A series of BLAST comparisons is performed and low-information segments and repetitive elements (e.g., dinucleotide repeats, Alu repeats, etc.) are replaced by "n's", or masked, to prevent spurious matches. Mitochondrial and ribosomal RNA sequences are also removed. The processed sequences are then loaded into a relational database management system (RDMS) which assigns edited sequences to existing templates, if available. When additional sequences are added into the RDMS, a process is initiated which modifies existing templates or creates new templates from works in progress (i.e., nonfinal assembled sequences) containing queued sequences or the sequences themselves. After the new sequences have been assigned to templates, the templates can be merged into bins. If multiple templates exist in one bin, the bin can be split and the templates reannotated.

Once gene bins have been generated based upon sequence alignments, bins are "clone joined" based upon clone information. Clone joining occurs when the 5' sequence of one clone is present in one bin and the 3' sequence from the same clone is present in a different bin, indicating that the two bins should be merged into a single bin. Only bins which share at least two different clones are merged.

A resultant template sequence may contain either a partial or a full length open reading frame, or all or part of a genetic regulatory element. This variation is due in part to the fact that the full length cDNAs of many genes are several hundred, and sometimes several thousand, bases in length. With current technology, cDNAs comprising the coding regions of large genes cannot be cloned because of vector limitations, incomplete reverse transcription of the mRNA, or incomplete "second strand" synthesis. Template sequences may be extended to include additional contiguous sequences derived from the parent RNA transcript using a variety of methods known to those of skill in the art. Extension may thus be used to achieve the full length coding sequence of a gene.

Analysis of the cDNA Sequences

The cDNA sequences are analyzed using a variety of programs and algorithms which are well known in the art. (See, e.g., Ausubel, 1997, supra, Chapter 7.7; Meyers, R.A. (Ed.) (1995) Molecular Biology and Biotechnology, Wiley VCH, New York NY, pp. 856-853; and Table 6.) These analyses comprise both reading frame determinations, e.g., based on triplet codon periodicity for particular organisms (Fickett, J.W. (1982) Nucleic Acids Res. 10:5303-5318); analyses of potential start and

stop codons; and homology searches.

Computer programs known to those of skill in the art for performing computer-assisted searches for amino acid and nucleic acid sequence similarity, include, for example, Basic Local Alignment Search Tool (BLAST; Altschul, S.F. (1993) J. Mol. Evol. 36:290-300; Altschul, S.F. et al. (1990) J. Mol. Biol. 215:403-410). BLAST is especially useful in determining exact matches and comparing two sequence fragments of arbitrary but equal lengths, whose alignment is locally maximal and for which the alignment score meets or exceeds a threshold or cutoff score set by the user (Karlin, S. et al. (1988) Proc. Natl. Acad. Sci. USA 85:841-845). Using an appropriate search tool (e.g., BLAST or HMM), GenBank, SwissProt, BLOCKS, PFAM and other databases may be searched for sequences containing regions of homology to a query sptm or SPTM of the present invention.

Other approaches to the identification, assembly, storage, and display of nucleotide and polypeptide sequences are provided in "Relational Database for Storing Biomolecule Information," U.S.S.N. 08/947,845, filed October 9, 1997; "Project-Based Full-Length Biomolecular Sequence Database," U.S. Patent Number 5,953,727; and "Relational Database and System for Storing Information Relating to Biomolecular Sequences," U.S.S.N. 09/034,807, filed March 4, 1998, all of which are incorporated by reference herein in their entirety.

Protein hierarchies can be assigned to the putative encoded polypeptide based on, e.g., motif, BLAST, or biological analysis. Methods for assigning these hierarchies are described, for example, in "Database System Employing Protein Function Hierarchies for Viewing Biomolecular Sequence Data," U.S. Patent Number 6,023,659, incorporated herein by reference.

Human Secretory Sequences

The sptm of the present invention may be used for a variety of diagnostic and therapeutic purposes. For example, an sptm may be used to diagnose a particular condition, disease, or disorder associated with cell signaling. Such conditions, diseases, and disorders include, but are not limited to, a cell proliferative disorder such as actinic keratosis, arteriosclerosis, atherosclerosis, bursitis, cirrhosis, hepatitis, mixed connective tissue disease (MCTD), myelofibrosis, paroxysmal nocturnal hemoglobinuria, polycythemia vera, psoriasis, primary thrombocythemia, and cancers including adenocarcinoma, leukemia, lymphoma, melanoma, myeloma, sarcoma, teratocarcinoma, and, in particular, a cancer of the adrenal gland, bladder, bone, bone marrow, brain, breast, cervix, gall bladder, ganglia, gastrointestinal tract, heart, kidney, liver, lung, muscle, ovary, pancreas, parathyroid, penis, prostate, salivary glands, skin, spleen, testis, thymus, thyroid, and uterus; an immune system disorder such as such as inflammation, actinic keratosis, acquired immunodeficiency syndrome (AIDS), Addison's disease, adult respiratory distress syndrome, allergies, ankylosing

spondylitis, amyloidosis, anemia, arteriosclerosis, asthma, atherosclerosis, autoimmune hemolytic anemia, autoimmune thyroiditis, bronchitis, bursitis, cholecystitis, cirrhosis, contact dermatitis, Crohn's disease, atopic dermatitis, dermatomyositis, diabetes mellitus, emphysema, erythroblastosis fetalis, erythema nodosum, atrophic gastritis, glomerulonephritis, Goodpasture's syndrome, gout, Graves' disease, Hashimoto's thyroiditis, paroxysmal nocturnal hemoglobinuria, hepatitis, hypereosinophilia, irritable bowel syndrome, episodic lymphopenia with lymphocytotoxins, mixed connective tissue disease (MCTD), multiple sclerosis, myasthenia gravis, myocardial or pericardial inflammation, myelofibrosis, osteoarthritis, osteoporosis, pancreatitis, polycythemia vera, polymyositis, psoriasis, Reiter's syndrome, rheumatoid arthritis, scleroderma, Sjögren's syndrome, systemic anaphylaxis, systemic lupus erythematosus, systemic sclerosis, primary thrombocythemia, thrombocytopenic purpura, ulcerative colitis, uveitis, Werner syndrome, complications of cancer, hemodialysis, and extracorporeal circulation, trauma, and hematopoietic cancer including lymphoma, leukemia, and myeloma; and a neurological disorder such as epilepsy, ischemic cerebrovascular disease, stroke, cerebral neoplasms, Alzheimer's disease, Pick's disease, Huntington's disease, dementia, Parkinson's disease and other extrapyramidal disorders, amyotrophic lateral sclerosis and other motor neuron disorders, progressive neural muscular atrophy, retinitis pigmentosa, hereditary ataxias, multiple sclerosis and other demyelinating diseases, bacterial and viral meningitis, brain abscess, subdural empyema, epidural abscess, suppurative intracranial thrombophlebitis, myelitis and radiculitis, viral central nervous system disease, prion diseases including kuru, Creutzfeldt-Jakob disease, and Gerstmann-Straussler-Scheinker syndrome, fatal familial insomnia, nutritional and metabolic diseases of the nervous system, neurofibromatosis, tuberous sclerosis, cerebelloretinal hemangioblastomatosis, encephalotrigeminal syndrome, mental retardation and other developmental disorder of the central nervous system, cerebral palsy, a neuroskeletal disorder, an autonomic nervous system disorder, a cranial nerve disorder, a spinal cord disease, muscular dystrophy and other neuromuscular disorder, a peripheral nervous system disorder, dermatomyositis and polymyositis, inherited, metabolic, endocrine, and toxic myopathy, myasthenia gravis, periodic paralysis, a mental disorder including mood, anxiety, and schizophrenic disorder, seasonal affective disorder (SAD), akathesia, amnesia, catatonia, diabetic neuropathy, tardive dyskinesia, dystonias, paranoid psychoses, postherpetic neuralgia, and Tourette's disorder. The sptm can be used to detect the presence of, or to quantify the amount of, an sptm-related polynucleotide in a sample. This information is then compared to information obtained from appropriate reference samples, and a diagnosis is established. Alternatively, a polynucleotide complementary to a given sptm can inhibit or inactivate a therapeutically relevant gene related to the sptm.

Analysis of sptm Expression Patterns

The expression of sptm may be routinely assessed by hybridization-based methods to determine, for example, the tissue-specificity, disease-specificity, or developmental stage-specificity of sptm expression. For example, the level of expression of sptm may be compared among different cell types or tissues, among diseased and normal cell types or tissues, among cell types or tissues at different developmental stages, or among cell types or tissues undergoing various treatments. This type of analysis is useful, for example, to assess the relative levels of sptm expression in fully or partially differentiated cells or tissues, to determine if changes in sptm expression levels are correlated with the development or progression of specific disease states, and to assess the response of a cell or tissue to a specific therapy, for example, in pharmacological or toxicological studies. Methods for the analysis of sptm expression are based on hybridization and amplification technologies and include membrane-based procedures such as northern blot analysis, high-throughput procedures that utilize, for example, microarrays, and PCR-based procedures.

Hybridization and Genetic Analysis

The sptm, their fragments, or complementary sequences, may be used to identify the presence of and/or to determine the degree of similarity between two (or more) nucleic acid sequences. The sptm may be hybridized to naturally occurring or recombinant nucleic acid sequences under appropriately selected temperatures and salt concentrations. Hybridization with a probe based on the nucleic acid sequence of at least one of the sptm allows for the detection of nucleic acid sequences, including genomic sequences, which are identical or related to the sptm of the Sequence Listing. Probes may be selected from non-conserved or unique regions of at least one of the polynucleotides of SEQ ID NO:1-75 and tested for their ability to identify or amplify the target nucleic acid sequence using standard protocols.

Polynucleotide sequences that are capable of hybridizing, in particular, to those shown in SEQ ID NO:1-75 and fragments thereof, can be identified using various conditions of stringency. (See, e.g., Wahl, G.M. and S.L. Berger (1987) Methods Enzymol. 152:399-407; Kimmel, A.R. (1987) Methods Enzymol. 152:507-511.) Hybridization conditions are discussed in "Definitions."

A probe for use in Southern or northern hybridization may be derived from a fragment of an sptm sequence, or its complement, that is up to several hundred nucleotides in length and is either single-stranded or double-stranded. Such probes may be hybridized in solution to biological materials such as plasmids, bacterial, yeast, or human artificial chromosomes, cleared or sectioned tissues, or to artificial substrates containing sptm. Microarrays are particularly suitable for identifying the presence of and detecting the level of expression for multiple genes of interest by examining gene expression correlated with, e.g., various stages of development, treatment with a drug or compound, or disease progression. An array analogous to a dot or slot blot may be used to arrange and link

polynucleotides to the surface of a substrate using one or more of the following: mechanical (vacuum), chemical, thermal, or UV bonding procedures. Such an array may contain any number of sptm and may be produced by hand or by using available devices, materials, and machines.

Microarrays may be prepared, used, and analyzed using methods known in the art. (See, e.g., Brennan, T.M. et al. (1995) U.S. Patent No. 5,474,796; Schena, M. et al. (1996) Proc. Natl. Acad. Sci. USA 93:10614-10619; Baldeschweiler et al. (1995) PCT application WO95/251116; Shalon, D. et al. (1995) PCT application WO95/35505; Heller, R.A. et al. (1997) Proc. Natl. Acad. Sci. USA 94:2150-2155; and Heller, M.J. et al. (1997) U.S. Patent No. 5,605,662.)

Probes may be labeled by either PCR or enzymatic techniques using a variety of commercially available reporter molecules. For example, commercial kits are available for radioactive and chemiluminescent labeling (Amersham Pharmacia Biotech) and for alkaline phosphatase labeling (Life Technologies). Alternatively, sptm may be cloned into commercially available vectors for the production of RNA probes. Such probes may be transcribed in the presence of at least one labeled nucleotide (e.g., ^{32}P-ATP, Amersham Pharmacia Biotech).

Additionally the polynucleotides of SEQ ID NO:1-75 or suitable fragments thereof can be used to isolate full length cDNA sequences utilizing hybridization and/or amplification procedures well known in the art, e.g., cDNA library screening, PCR amplification, etc. The molecular cloning of such full length cDNA sequences may employ the method of cDNA library screening with probes using the hybridization, stringency, washing, and probing strategies described above and in Ausubel, supra, Chapters 3, 5, and 6. These procedures may also be employed with genomic libraries to isolate genomic sequences of sptm in order to analyze, e.g., regulatory elements.

Genetic Mapping

Gene identification and mapping are important in the investigation and treatment of almost all conditions, diseases, and disorders. Cancer, cardiovascular disease, Alzheimer's disease, arthritis, diabetes, and mental illnesses are of particular interest. Each of these conditions is more complex than the single gene defects of sickle cell anemia or cystic fibrosis, with select groups of genes being predictive of predisposition for a particular condition, disease, or disorder. For example, cardiovascular disease may result from malfunctioning receptor molecules that fail to clear cholesterol from the bloodstream, and diabetes may result when a particular individual's immune system is activated by an infection and attacks the insulin-producing cells of the pancreas. In some studies, Alzheimer's disease has been linked to a gene on chromosome 21; other studies predict a different gene and location. Mapping of disease genes is a complex and reiterative process and generally proceeds from genetic linkage analysis to physical mapping.

As a condition is noted among members of a family, a genetic linkage map traces parts of

chromosomes that are inherited in the same pattern as the condition. Statistics link the inheritance of particular conditions to particular regions of chromosomes, as defined by RFLP or other markers. (See, for example, Lander, E. S. and Botstein, D. (1986) Proc. Natl. Acad. Sci. USA 83:7353-7357.) Occasionally, genetic markers and their locations are known from previous studies. More often, however, the markers are simply stretches of DNA that differ among individuals. Examples of genetic linkage maps can be found in various scientific journals or at the Online Mendelian Inheritance in Man (OMIM) World Wide Web site.

In another embodiment of the invention, sptm sequences may be used to generate hybridization probes useful in chromosomal mapping of naturally occurring genomic sequences. Either coding or noncoding sequences of sptm may be used, and in some instances, noncoding sequences may be preferable over coding sequences. For example, conservation of an sptm coding sequence among members of a multi-gene family may potentially cause undesired cross hybridization during chromosomal mapping. The sequences may be mapped to a particular chromosome, to a specific region of a chromosome, or to artificial chromosome constructions, e.g., human artificial chromosomes (HACs), yeast artificial chromosomes (YACs), bacterial artificial chromosomes (BACs), bacterial P1 constructions, or single chromosome cDNA libraries. (See, e.g., Harrington, J.J. et al. (1997) Nat. Genet. 15:345-355; Price, C.M. (1993) Blood Rev. 7:127-134; and Trask, B.J. (1991) Trends Genet. 7:149-154.)

Fluorescent in situ hybridization (FISH) may be correlated with other physical chromosome mapping techniques and genetic map data. (See, e.g., Meyers, supra, pp. 965-968.) Correlation between the location of sptm on a physical chromosomal map and a specific disorder, or a predisposition to a specific disorder, may help define the region of DNA associated with that disorder. The sptm sequences may also be used to detect polymorphisms that are genetically linked to the inheritance of a particular condition, disease, or disorder.

In situ hybridization of chromosomal preparations and genetic mapping techniques, such as linkage analysis using established chromosomal markers, may be used for extending existing genetic maps. Often the placement of a gene on the chromosome of another mammalian species, such as mouse, may reveal associated markers even if the number or arm of the corresponding human chromosome is not known. These new marker sequences can be mapped to human chromosomes and may provide valuable information to investigators searching for disease genes using positional cloning or other gene discovery techniques. Once a disease or syndrome has been crudely correlated by genetic linkage with a particular genomic region, e.g., ataxia-telangiectasia to 11q22-23, any sequences mapping to that area may represent associated or regulatory genes for further investigation. (See, e.g., Gatti, R.A. et al. (1988) Nature 336:577-580.) The nucleotide sequences of the subject invention may also be used to detect differences in chromosomal architecture due to translocation,

inversion, etc., among normal, carrier, or affected individuals.

Once a disease-associated gene is mapped to a chromosomal region, the gene must be cloned in order to identify mutations or other alterations (e.g., translocations or inversions) that may be correlated with disease. This process requires a physical map of the chromosomal region containing the disease-gene of interest along with associated markers. A physical map is necessary for determining the nucleotide sequence of and order of marker genes on a particular chromosomal region. Physical mapping techniques are well known in the art and require the generation of overlapping sets of cloned DNA fragments from a particular organelle, chromosome, or genome. These clones are analyzed to reconstruct and catalog their order. Once the position of a marker is determined, the DNA from that region is obtained by consulting the catalog and selecting clones from that region. The gene of interest is located through positional cloning techniques using hybridization or similar methods.

Diagnostic Uses

The sptm of the present invention may be used to design probes useful in diagnostic assays. Such assays, well known to those skilled in the art, may be used to detect or confirm conditions, disorders, or diseases associated with abnormal levels of sptm expression. Labeled probes developed from sptm sequences are added to a sample under hybridizing conditions of desired stringency. In some instances, sptm, or fragments or oligonucleotides derived from sptm, may be used as primers in amplification steps prior to hybridization. The amount of hybridization complex formed is quantified and compared with standards for that cell or tissue. If sptm expression varies significantly from the standard, the assay indicates the presence of the condition, disorder, or disease. Qualitative or quantitative diagnostic methods may include northern, dot blot, or other membrane or dip-stick based technologies or multiple-sample format technologies such as PCR, enzyme-linked immunosorbent assay (ELISA)-like, pin, or chip-based assays.

The probes described above may also be used to monitor the progress of conditions, disorders, or diseases associated with abnormal levels of sptm expression, or to evaluate the efficacy of a particular therapeutic treatment. The candidate probe may be identified from the sptm that are specific to a given human tissue and have not been observed in GenBank or other genome databases. Such a probe may be used in animal studies, preclinical tests, clinical trials, or in monitoring the treatment of an individual patient. In a typical process, standard expression is established by methods well known in the art for use as a basis of comparison, samples from patients affected by the disorder or disease are combined with the probe to evaluate any deviation from the standard profile, and a therapeutic agent is administered and effects are monitored to generate a treatment profile. Efficacy is evaluated by determining whether the expression progresses toward or returns to the standard

normal pattern. Treatment profiles may be generated over a period of several days or several months. Statistical methods well known to those skilled in the art may be use to determine the significance of such therapeutic agents.

The polynucleotides are also useful for identifying individuals from minute biological samples, for example, by matching the RFLP pattern of a sample's DNA to that of an individual's DNA. The polynucleotides of the present invention can also be used to determine the actual base-by-base DNA sequence of selected portions of an individual's genome. These sequences can be used to prepare PCR primers for amplifying and isolating such selected DNA, which can then be sequenced. Using this technique, an individual can be identified through a unique set of DNA sequences. Once a unique ID database is established for an individual, positive identification of that individual can be made from extremely small tissue samples.

In a particular aspect, oligonucleotide primers derived from the sptm of the invention may be used to detect single nucleotide polymorphisms (SNPs). SNPs are substitutions, insertions and deletions that are a frequent cause of inherited or acquired genetic disease in humans. Methods of SNP detection include, but are not limited to, single-stranded conformation polymorphism (SSCP) and fluorescent SSCP (fSSCP) methods. In SSCP, oligonucleotide primers derived from sptm are used to amplify DNA using the polymerase chain reaction (PCR). The DNA may be derived, for example, from diseased or normal tissue, biopsy samples, bodily fluids, and the like. SNPs in the DNA cause differences in the secondary and tertiary structures of PCR products in single-stranded form, and these differences are detectable using gel electrophoresis in non-denaturing gels. In fSCCP, the oligonucleotide primers are fluorescently labeled, which allows detection of the amplimers in high-throughput equipment such as DNA sequencing machines. Additionally, sequence database analysis methods, termed in silico SNP (isSNP), are capable of identifying polymorphisms by comparing the sequences of individual overlapping DNA fragments which assemble into a common consensus sequence. These computer-based methods filter out sequence variations due to laboratory preparation of DNA and sequencing errors using statistical models and automated analyses of DNA sequence chromatograms. In the alternative, SNPs may be detected and characterized by mass spectrometry using, for example, the high throughput MASSARRAY system (Sequenom, Inc., San Diego CA).

DNA-based identification techniques are critical in forensic technology. DNA sequences taken from very small biological samples such as tissues, e.g., hair or skin, or body fluids, e.g., blood, saliva, semen, etc., can be amplified using, e.g., PCR, to identify individuals. (See, e.g., Erlich, H. (1992) PCR Technology, Freeman and Co., New York, NY). Similarly, polynucleotides of the present invention can be used as polymorphic markers.

There is also a need for reagents capable of identifying the source of a particular tissue.

Appropriate reagents can comprise, for example, DNA probes or primers prepared from the sequences of the present invention that are specific for particular tissues. Panels of such reagents can identify tissue by species and/or by organ type. In a similar fashion, these reagents can be used to screen tissue cultures for contamination.

The polynucleotides of the present invention can also be used as molecular weight markers on nucleic acid gels or Southern blots, as diagnostic probes for the presence of a specific mRNA in a particular cell type, in the creation of subtracted cDNA libraries which aid in the discovery of novel polynucleotides, in selection and synthesis of oligomers for attachment to an array or other support, and as an antigen to elicit an immune response.

Disease Model Systems Using sptm

The polynucleotides encoding SPTM or their mammalian homologs may be "knocked out" in an animal model system using homologous recombination in embryonic stem (ES) cells. Such techniques are well known in the art and are useful for the generation of animal models of human disease. (See, e.g., U.S. Patent Number 5,175,383 and U.S. Patent Number 5,767,337.) For example, mouse ES cells, such as the mouse 129/SvJ cell line, are derived from the early mouse embryo and grown in culture. The ES cells are transformed with a vector containing the gene of interest disrupted by a marker gene, e.g., the neomycin phosphotransferase gene (neo; Capecchi, M.R. (1989) Science 244:1288-1292). The vector integrates into the corresponding region of the host genome by homologous recombination. Alternatively, homologous recombination takes place using the Cre-loxP system to knockout a gene of interest in a tissue- or developmental stage-specific manner (Marth, J.D. (1996) Clin. Invest. 97:1999-2002; Wagner, K.U. et al. (1997) Nucleic Acids Res. 25:4323-4330). Transformed ES cells are identified and microinjected into mouse cell blastocysts such as those from the C57BL/6 mouse strain. The blastocysts are surgically transferred to pseudopregnant dams, and the resulting chimeric progeny are genotyped and bred to produce heterozygous or homozygous strains. Transgenic animals thus generated may be tested with potential therapeutic or toxic agents.

The polynucleotides encoding SPTM may also be manipulated in vitro in ES cells derived from human blastocysts. Human ES cells have the potential to differentiate into at least eight separate cell lineages including endoderm, mesoderm, and ectodermal cell types. These cell lineages differentiate into, for example, neural cells, hematopoietic lineages, and cardiomyocytes (Thomson, J.A. et al. (1998) Science 282:1145-1147).

The polynucleotides encoding SPTM of the invention can also be used to create "knockin" humanized animals (pigs) or transgenic animals (mice or rats) to model human disease. With knockin technology, a region of sptm is injected into animal ES cells, and the injected sequence integrates into the animal cell genome. Transformed cells are injected into blastulae, and the blastulae are implanted

as described above. Transgenic progeny or inbred lines are studied and treated with potential pharmaceutical agents to obtain information on treatment of a human disease. Alternatively, a mammal inbred to overexpress sptm, resulting, e.g., in the secretion of SPTM in its milk, may also serve as a convenient source of that protein (Janne, J. et al. (1998) Biotechnol. Annu. Rev. 4:55-74).

Screening Assays

SPTM encoded by polynucleotides of the present invention may be used to screen for molecules that bind to or are bound by the encoded polypeptides. The binding of the polypeptide and the molecule may activate (agonist), increase, inhibit (antagonist), or decrease activity of the polypeptide or the bound molecule. Examples of such molecules include antibodies, oligonucleotides, proteins (e.g., receptors), or small molecules.

Preferably, the molecule is closely related to the natural ligand of the polypeptide, e.g., a ligand or fragment thereof, a natural substrate, or a structural or functional mimetic. (See, Coligan et al., (1991) Current Protocols in Immunology 1(2): Chapter 5.) Similarly, the molecule can be closely related to the natural receptor to which the polypeptide binds, or to at least a fragment of the receptor, e.g., the active site. In either case, the molecule can be rationally designed using known techniques. Preferably, the screening for these molecules involves producing appropriate cells which express the polypeptide, either as a secreted protein or on the cell membrane. Preferred cells include cells from mammals, yeast, Drosophila, or E. coli. Cells expressing the polypeptide or cell membrane fractions which contain the expressed polypeptide are then contacted with a test compound and binding, stimulation, or inhibition of activity of either the polypeptide or the molecule is analyzed.

An assay may simply test binding of a candidate compound to the polypeptide, wherein binding is detected by a fluorophore, radioisotope, enzyme conjugate, or other detectable label. Alternatively, the assay may assess binding in the presence of a labeled competitor.

Additionally, the assay can be carried out using cell-free preparations, polypeptide/molecule affixed to a solid support, chemical libraries, or natural product mixtures. The assay may also simply comprise the steps of mixing a candidate compound with a solution containing a polypeptide, measuring polypeptide/molecule activity or binding, and comparing the polypeptide/molecule activity or binding to a standard.

Preferably, an ELISA assay using, e.g., a monoclonal or polyclonal antibody, can measure polypeptide level in a sample. The antibody can measure polypeptide level by either binding, directly or indirectly, to the polypeptide or by competing with the polypeptide for a substrate.

All of the above assays can be used in a diagnostic or prognostic context. The molecules discovered using these assays can be used to treat disease or to bring about a particular result in a

patient (e.g., blood vessel growth) by activating or inhibiting the polypeptide/molecule. Moreover, the assays can discover agents which may inhibit or enhance the production of the polypeptide from suitably manipulated cells or tissues.

Transcript Imaging and Toxicological Testing

Another embodiment relates to the use of sptm to develop a transcript image of a tissue or cell type. A transcript image represents the global pattern of gene expression by a particular tissue or cell type. Global gene expression patterns are analyzed by quantifying the number of expressed genes and their relative abundance under given conditions and at a given time. (See Seilhamer et al., "Comparative Gene Transcript Analysis," U.S. Patent Number 5,840,484, expressly incorporated by reference herein.) Thus a transcript image may be generated by hybridizing the polynucleotides of the present invention or their complements to the totality of transcripts or reverse transcripts of a particular tissue or cell type. In one embodiment, the hybridization takes place in high-throughput format, wherein the polynucleotides of the present invention or their complements comprise a subset of a plurality of elements on a microarray. The resultant transcript image would provide a profile of gene activity pertaining to cell signaling.

Transcript images which profile sptm expression may be generated using transcripts isolated from tissues, cell lines, biopsies, or other biological samples. The transcript image may thus reflect sptm expression in vivo, as in the case of a tissue or biopsy sample, or in vitro, as in the case of a cell line.

Transcript images which profile sptm expression may also be used in conjunction with in vitro model systems and preclinical evaluation of pharmaceuticals, as well as toxicological testing of industrial and naturally-occurring environmental compounds. All compounds induce characteristic gene expression patterns, frequently termed molecular fingerprints or toxicant signatures, which are indicative of mechanisms of action and toxicity (Nuwaysir, E. F. et al. (1999) Mol. Carcinog. 24:153-159; Steiner, S. and Anderson, N. L. (2000) Toxicol. Lett. 112-113:467-71, expressly incorporated by reference herein). If a test compound has a signature similar to that of a compound with known toxicity, it is likely to share those toxic properties. These fingerprints or signatures are most useful and refined when they contain expression information from a large number of genes and gene families. Ideally, a genome-wide measurement of expression provides the highest quality signature. Even genes whose expression is not altered by any tested compounds are important as well, as the levels of expression of these genes are used to normalize the rest of the expression data. The normalization procedure is useful for comparison of expression data after treatment with different compounds. While the assignment of gene function to elements of a toxicant signature aids in interpretation of toxicity mechanisms, knowledge of gene function is not necessary for the statistical

matching of signatures which leads to prediction of toxicity. (See, for example, Press Release 00-02 from the National Institute of Environmental Health Sciences, released February 29, 2000, available at http://www.niehs.nih.gov/oc/news/toxchip.htm.) Therefore, it is important and desirable in toxicological screening using toxicant signatures to include all expressed gene sequences.

In one embodiment, the toxicity of a test compound is assessed by treating a biological sample containing nucleic acids with the test compound. Nucleic acids that are expressed in the treated biological sample are hybridized with one or more probes specific to the polynucleotides of the present invention, so that transcript levels corresponding to the polynucleotides of the present invention may be quantified. The transcript levels in the treated biological sample are compared with levels in an untreated biological sample. Differences in the transcript levels between the two samples are indicative of a toxic response caused by the test compound in the treated sample.

Another particular embodiment relates to the use of SPTM encoded by polynucleotides of the present invention to analyze the proteome of a tissue or cell type. The term proteome refers to the global pattern of protein expression in a particular tissue or cell type. Each protein component of a proteome can be subjected individually to further analysis. Proteome expression patterns, or profiles, are analyzed by quantifying the number of expressed proteins and their relative abundance under given conditions and at a given time. A profile of a cell's proteome may thus be generated by separating and analyzing the polypeptides of a particular tissue or cell type. In one embodiment, the separation is achieved using two-dimensional gel electrophoresis, in which proteins from a sample are separated by isoelectric focusing in the first dimension, and then according to molecular weight by sodium dodecyl sulfate slab gel electrophoresis in the second dimension (Steiner and Anderson, supra). The proteins are visualized in the gel as discrete and uniquely positioned spots, typically by staining the gel with an agent such as Coomassie Blue or silver or fluorescent stains. The optical density of each protein spot is generally proportional to the level of the protein in the sample. The optical densities of equivalently positioned protein spots from different samples, for example, from biological samples either treated or untreated with a test compound or therapeutic agent, are compared to identify any changes in protein spot density related to the treatment. The proteins in the spots are partially sequenced using, for example, standard methods employing chemical or enzymatic cleavage followed by mass spectrometry. The identity of the protein in a spot may be determined by comparing its partial sequence, preferably of at least 5 contiguous amino acid residues, to the polypeptide sequences of the present invention. In some cases, further sequence data may be obtained for definitive protein identification.

A proteomic profile may also be generated using antibodies specific for SPTM to quantify the levels of SPTM expression. In one embodiment, the antibodies are used as elements on a microarray, and protein expression levels are quantified by exposing the microarray to the sample and detecting

the levels of protein bound to each array element (Lueking, A. et al. (1999) Anal. Biochem. 270:103-11; Mendoze, L. G. et al. (1999) Biotechniques 27:778-88). Detection may be performed by a variety of methods known in the art, for example, by reacting the proteins in the sample with a thiol- or amino-reactive fluorescent compound and detecting the amount of fluorescence bound at each array element.

Toxicant signatures at the proteome level are also useful for toxicological screening, and should be analyzed in parallel with toxicant signatures at the transcript level. There is a poor correlation between transcript and protein abundances for some proteins in some tissues (Anderson, N. L. and Seilhamer, J. (1997) Electrophoresis 18:533-537), so proteome toxicant signatures may be useful in the analysis of compounds which do not significantly affect the transcript image, but which alter the proteomic profile. In addition, the analysis of transcripts in body fluids is difficult, due to rapid degradation of mRNA, so proteomic profiling may be more reliable and informative in such cases.

In another embodiment, the toxicity of a test compound is assessed by treating a biological sample containing proteins with the test compound. Proteins that are expressed in the treated biological sample are separated so that the amount of each protein can be quantified. The amount of each protein is compared to the amount of the corresponding protein in an untreated biological sample. A difference in the amount of protein between the two samples is indicative of a toxic response to the test compound in the treated sample. Individual proteins are identified by sequencing the amino acid residues of the individual proteins and comparing these partial sequences to the SPTM encoded by polynucleotides of the present invention.

In another embodiment, the toxicity of a test compound is assessed by treating a biological sample containing proteins with the test compound. Proteins from the biological sample are incubated with antibodies specific to the SPTM encoded by polynucleotides of the present invention. The amount of protein recognized by the antibodies is quantified. The amount of protein in the treated biological sample is compared with the amount in an untreated biological sample. A difference in the amount of protein between the two samples is indicative of a toxic response to the test compound in the treated sample.

Transcript images may be used to profile sptm expression in distinct tissue types. This process can be used to determine cell signaling activity in a particular tissue type relative to this activity in a different tissue type. Transcript images may be used to generate a profile of sptm expression characteristic of diseased tissue. Transcript images of tissues before and after treatment may be used for diagnostic purposes, to monitor the progression of disease, and to monitor the efficacy of drug treatments for diseases which affect cell signaling activity.

Transcript images of cell lines can be used to assess cell signaling activity and/or to identify

cell lines that lack or misregulate this activity. Such cell lines may then be treated with pharmaceutical agents, and a transcript image following treatment may indicate the efficacy of these agents in restoring desired levels of this activity. A similar approach may be used to assess the toxicity of pharmaceutical agents as reflected by undesirable changes in cell signaling activity. Candidate pharmaceutical agents may be evaluated by comparing their associated transcript images with those of pharmaceutical agents of known effectiveness.

Antisense Molecules

The polynucleotides of the present invention are useful in antisense technology. Antisense technology or therapy relies on the modulation of expression of a target protein through the specific binding of an antisense sequence to a target sequence encoding the target protein or directing its expression. (See, e.g., Agrawal, S., ed. (1996) Antisense Therapeutics, Humana Press Inc., Totawa NJ; Alama, A. et al. (1997) Pharmacol. Res. 36(3):171-178; Crooke, S.T. (1997) Adv. Pharmacol. 40:1-49; Sharma, H.W. and R. Narayanan (1995) Bioessays 17(12):1055-1063; and Lavrosky, Y. et al. (1997) Biochem. Mol. Med. 62(1):11-22.) An antisense sequence is a polynucleotide sequence capable of specifically hybridizing to at least a portion of the target sequence. Antisense sequences bind to cellular mRNA and/or genomic DNA, affecting translation and/or transcription. Antisense sequences can be DNA, RNA, or nucleic acid mimics and analogs. (See, e.g., Rossi, J.J. et al. (1991) Antisense Res. Dev. 1(3):285-288; Lee, R. et al. (1998) Biochemistry 37(3):900-1010; Pardridge, W.M. et al. (1995) Proc. Natl. Acad. Sci. USA 92(12):5592-5596; and Nielsen, P. E. and Haaima, G. (1997) Chem. Soc. Rev. 96:73-78.) Typically, the binding which results in modulation of expression occurs through hybridization or binding of complementary base pairs. Antisense sequences can also bind to DNA duplexes through specific interactions in the major groove of the double helix.

The polynucleotides of the present invention and fragments thereof can be used as antisense sequences to modify the expression of the polypeptide encoded by sptm. The antisense sequences can be produced ex vivo, such as by using any of the ABI nucleic acid synthesizer series (Applied Biosystems) or other automated systems known in the art. Antisense sequences can also be produced biologically, such as by transforming an appropriate host cell with an expression vector containing the sequence of interest. (See, e.g., Agrawal, supra.)

In therapeutic use, any gene delivery system suitable for introduction of the antisense sequences into appropriate target cells can be used. Antisense sequences can be delivered intracellularly in the form of an expression plasmid which, upon transcription, produces a sequence complementary to at least a portion of the cellular sequence encoding the target protein. (See, e.g., Slater, J.E., et al. (1998) J. Allergy Clin. Immunol. 102(3):469-475; and Scanlon, K.J., et al. (1995) 9(13):1288-1296.) Antisense sequences can also be introduced intracellularly through the use of viral

vectors, such as retrovirus and adeno-associated virus vectors. (See, e.g., Miller, A.D. (1990) Blood 76:271; Ausubel, F.M. et al. (1995) Current Protocols in Molecular Biology, John Wiley & Sons, New York NY; Uckert, W. and W. Walther (1994) Pharmacol. Ther. 63(3):323-347.) Other gene delivery mechanisms include liposome-derived systems, artificial viral envelopes, and other systems known in the art. (See, e.g., Rossi, J.J. (1995) Br. Med. Bull. 51(1):217-225; Boado, R.J. et al. (1998) J. Pharm. Sci. 87(11):1308-1315; and Morris, M.C. et al. (1997) Nucleic Acids Res. 25(14):2730-2736.)

Expression

In order to express a biologically active SPTM, the nucleotide sequences encoding SPTM or fragments thereof may be inserted into an appropriate expression vector, i.e., a vector which contains the necessary elements for transcriptional and translational control of the inserted coding sequence in a suitable host. Methods which are well known to those skilled in the art may be used to construct expression vectors containing sequences encoding SPTM and appropriate transcriptional and translational control elements. These methods include in vitro recombinant DNA techniques, synthetic techniques, and in vivo genetic recombination. (See, e.g., Sambrook, supra, Chapters 4, 8, 16, and 17; and Ausubel, supra, Chapters 9, 10, 13, and 16.)

A variety of expression vector/host systems may be utilized to contain and express sequences encoding SPTM. These include, but are not limited to, microorganisms such as bacteria transformed with recombinant bacteriophage, plasmid, or cosmid DNA expression vectors; yeast transformed with yeast expression vectors; insect cell systems infected with viral expression vectors (e.g., baculovirus); plant cell systems transformed with viral expression vectors (e.g., cauliflower mosaic virus, CaMV, or tobacco mosaic virus, TMV) or with bacterial expression vectors (e.g., Ti or pBR322 plasmids); or animal (mammalian) cell systems. (See, e.g., Sambrook, supra; Ausubel, 1995, supra, Van Heeke, G. and S.M. Schuster (1989) J. Biol. Chem. 264:5503-5509; Bitter, G.A. et al. (1987) Methods Enzymol. 153:516-544; Scorer, C.A. et al. (1994) Bio/Technology 12:181-184; Engelhard, E.K. et al. (1994) Proc. Natl. Acad. Sci. USA 91:3224-3227; Sandig, V. et al. (1996) Hum. Gene Ther. 7:1937-1945; Takamatsu, N. (1987) EMBO J. 6:307-311; Coruzzi, G. et al. (1984) EMBO J. 3:1671-1680; Broglie, R. et al. (1984) Science 224:838-843; Winter, J. et al. (1991) Results Probl. Cell Differ. 17:85-105; The McGraw Hill Yearbook of Science and Technology (1992) McGraw Hill, New York NY, pp. 191-196; Logan, J. and T. Shenk (1984) Proc. Natl. Acad. Sci. USA 81:3655-3659; and Harrington, J.J. et al. (1997) Nat. Genet. 15:345-355.) Expression vectors derived from retroviruses, adenoviruses, or herpes or vaccinia viruses, or from various bacterial plasmids, may be used for delivery of nucleotide sequences to the targeted organ, tissue, or cell population. (See, e.g., Di Nicola, M. et al. (1998) Cancer Gen. Ther. 5(6):350-356; Yu, M. et al., (1993) Proc. Natl. Acad. Sci.

USA 90(13):6340-6344; Buller, R.M. et al. (1985) Nature 317(6040):813-815; McGregor, D.P. et al. (1994) Mol. Immunol. 31(3):219-226; and Verma, I.M. and N. Somia (1997) Nature 389:239-242.) The invention is not limited by the host cell employed.

For long term production of recombinant proteins in mammalian systems, stable expression of SPTM in cell lines is preferred. For example, sequences encoding SPTM can be transformed into cell lines using expression vectors which may contain viral origins of replication and/or endogenous expression elements and a selectable marker gene on the same or on a separate vector. Any number of selection systems may be used to recover transformed cell lines. (See, e.g., Wigler, M. et al. (1977) Cell 11:223-232; Lowy, I. et al. (1980) Cell 22:817-823.; Wigler, M. et al. (1980) Proc. Natl. Acad. Sci. USA 77:3567-3570; Colbere-Garapin, F. et al. (1981) J. Mol. Biol. 150:1-14; Hartman, S.C. and R.C.Mulligan (1988) Proc. Natl. Acad. Sci. USA 85:8047-8051; Rhodes, C.A. (1995) Methods Mol. Biol. 55:121-131.)

Therapeutic Uses of sptm

The polynucleotides encoding SPTM of the invention may be used for somatic or germline gene therapy. Gene therapy may be performed to (i) correct a genetic deficiency (e.g., in the cases of severe combined immunodeficiency (SCID)-X1 disease characterized by X-linked inheritance (Cavazzana-Calvo, M. et al. (2000) Science 288:669-672), severe combined immunodeficiency syndrome associated with an inherited adenosine deaminase (ADA) deficiency (Blaese, R.M. et al. (1995) Science 270:475-480; Bordignon, C. et al. (1995) Science 270:470-475), cystic fibrosis (Zabner, J. et al. (1993) Cell 75:207-216; Crystal, R.G. et al. (1995) Hum. Gene Therapy 6:643-666; Crystal, R.G. et al. (1995) Hum. Gene Therapy 6:667-703), thalassemias, familial hypercholesterolemia, and hemophilia resulting from Factor VIII or Factor IX deficiencies (Crystal, R.G. (1995) Science 270:404-410; Verma, I.M. and Somia, N. (1997) Nature 389:239-242)), (ii) express a conditionally lethal gene product (e.g., in the case of cancers which result from unregulated cell proliferation), or (iii) express a protein which affords protection against intracellular parasites (e.g., against human retroviruses, such as human immunodeficiency virus (HIV) (Baltimore, D. (1988) Nature 335:395-396; Poeschla, E. et al. (1996) Proc. Natl. Acad. Sci. USA. 93:11395-11399), hepatitis B or C virus (HBV, HCV); fungal parasites, such as Candida albicans and Paracoccidioides brasiliensis; and protozoan parasites such as Plasmodium falciparum and Trypanosoma cruzi). In the case where a genetic deficiency in sptm expression or regulation causes disease, the expression of sptm from an appropriate population of transduced cells may alleviate the clinical manifestations caused by the genetic deficiency.

In a further embodiment of the invention, diseases or disorders caused by deficiencies in sptm are treated by constructing mammalian expression vectors comprising sptm and introducing these

vectors by mechanical means into sptm-deficient cells. Mechanical transfer technologies for use with cells in vivo or ex vitro include (i) direct DNA microinjection into individual cells, (ii) ballistic gold particle delivery, (iii) liposome-mediated transfection, (iv) receptor-mediated gene transfer, and (v) the use of DNA transposons (Morgan, R.A. and Anderson, W.F. (1993) Annu. Rev. Biochem. 62:191-217; Ivics, Z. (1997) Cell 91:501-510; Boulay, J-L. and Récipon, H. (1998) Curr. Opin. Biotechnol. 9:445-450).

Expression vectors that may be effective for the expression of sptm include, but are not limited to, the PCDNA 3.1, EPITAG, PRCCMV2, PREP, PVAX vectors (Invitrogen, Carlsbad CA), PCMV-SCRIPT, PCMV-TAG, PEGSH/PERV (Stratagene, La Jolla CA), and PTET-OFF, PTET-ON, PTRE2, PTRE2-LUC, PTK-HYG (Clontech, Palo Alto CA). The sptm of the invention may be expressed using (i) a constitutively active promoter, (e.g., from cytomegalovirus (CMV), Rous sarcoma virus (RSV), SV40 virus, thymidine kinase (TK), or β-actin genes), (ii) an inducible promoter (e.g., the tetracycline-regulated promoter (Gossen, M. and Bujard, H. (1992) Proc. Natl. Acad. Sci. U.S.A. 89:5547-5551; Gossen, M. et al., (1995) Science 268:1766-1769; Rossi, F.M.V. and Blau, H.M. (1998) Curr. Opin. Biotechnol. 9:451-456), commercially available in the T-REX plasmid (Invitrogen); the ecdysone-inducible promoter (available in the plasmids PVGRXR and PIND; Invitrogen); the FK506/rapamycin inducible promoter; or the RU486/mifepristone inducible promoter (Rossi, F.M.V. and Blau, H.M. supra), or (iii) a tissue-specific promoter or the native promoter of the endogenous gene encoding SPTM from a normal individual.

Commercially available liposome transformation kits (e.g., the PERFECT LIPID TRANSFECTION KIT, available from Invitrogen) allow one with ordinary skill in the art to deliver polynucleotides to target cells in culture and require minimal effort to optimize experimental parameters. In the alternative, transformation is performed using the calcium phosphate method (Graham, F.L. and Eb, A.J. (1973) Virology 52:456-467), or by electroporation (Neumann, E. et al. (1982) EMBO J. 1:841-845). The introduction of DNA to primary cells requires modification of these standardized mammalian transfection protocols.

In another embodiment of the invention, diseases or disorders caused by genetic defects with respect to sptm expression are treated by constructing a retrovirus vector consisting of (i) sptm under the control of an independent promoter or the retrovirus long terminal repeat (LTR) promoter, (ii) appropriate RNA packaging signals, and (iii) a Rev-responsive element (RRE) along with additional retrovirus *cis*-acting RNA sequences and coding sequences required for efficient vector propagation. Retrovirus vectors (e.g., PFB and PFBNEO) are commercially available (Stratagene) and are based on published data (Riviere, I. et al. (1995) Proc. Natl. Acad. Sci. U.S.A. 92:6733-6737), incorporated by reference herein. The vector is propagated in an appropriate vector producing cell line (VPCL) that expresses an envelope gene with a tropism for receptors on the target cells or a promiscuous envelope

protein such as VSVg (Armentano, D. et al. (1987) J. Virol. 61:1647-1650; Bender, M.A. et al. (1987) J. Virol. 61:1639-1646; Adam, M.A. and Miller, A.D. (1988) J. Virol. 62:3802-3806; Dull, T. et al. (1998) J. Virol. 72:8463-8471; Zufferey, R. et al. (1998) J. Virol. 72:9873-9880). U.S. Patent Number 5,910,434 to Rigg ("Method for obtaining retrovirus packaging cell lines producing high transducing efficiency retroviral supernatant") discloses a method for obtaining retrovirus packaging cell lines and is hereby incorporated by reference. Propagation of retrovirus vectors, transduction of a population of cells (e.g., $CD4^+$ T-cells), and the return of transduced cells to a patient are procedures well known to persons skilled in the art of gene therapy and have been well documented (Ranga, U. et al. (1997) J. Virol. 71:7020-7029; Bauer, G. et al. (1997) Blood 89:2259-2267; Bonyhadi, M.L. (1997) J. Virol. 71:4707-4716; Ranga, U. et al. (1998) Proc. Natl. Acad. Sci. U.S.A. 95:1201-1206; Su, L. (1997) Blood 89:2283-2290).

In the alternative, an adenovirus-based gene therapy delivery system is used to deliver sptm to cells which have one or more genetic abnormalities with respect to the expression of sptm. The construction and packaging of adenovirus-based vectors are well known to those with ordinary skill in the art. Replication defective adenovirus vectors have proven to be versatile for importing genes encoding immunoregulatory proteins into intact islets in the pancreas (Csete, M.E. et al. (1995) Transplantation 27:263-268). Potentially useful adenoviral vectors are described in U.S. Patent Number 5,707,618 to Armentano ("Adenovirus vectors for gene therapy"), hereby incorporated by reference. For adenoviral vectors, see also Antinozzi, P.A. et al. (1999) Annu. Rev. Nutr. 19:511-544 and Verma, I.M. and Somia, N. (1997) Nature 18:389:239-242, both incorporated by reference herein.

In another alternative, a herpes-based, gene therapy delivery system is used to deliver sptm to target cells which have one or more genetic abnormalities with respect to the expression of sptm. The use of herpes simplex virus (HSV)-based vectors may be especially valuable for introducing sptm to cells of the central nervous system, for which HSV has a tropism. The construction and packaging of herpes-based vectors are well known to those with ordinary skill in the art. A replication-competent herpes simplex virus (HSV) type 1-based vector has been used to deliver a reporter gene to the eyes of primates (Liu,.X. et al. (1999) Exp. Eye Res.169:385-395). The construction of a HSV-1 virus vector has also been disclosed in detail in U.S. Patent Number 5,804,413 to DeLuca ("Herpes simplex virus strains for gene transfer"), which is hereby incorporated by reference. U.S. Patent Number 5,804,413 teaches the use of recombinant HSV d92 which consists of a genome containing at least one exogenous gene to be transferred to a cell under the control of the appropriate promoter for purposes including human gene therapy. Also taught by this patent are the construction and use of recombinant HSV strains deleted for ICP4, ICP27 and ICP22. For HSV vectors, see also Goins, W. F. et al. 1999 J. Virol. 73:519-532 and Xu, H. et al., (1994) Dev. Biol. 163:152-161, hereby

incorporated by reference. The manipulation of cloned herpesvirus sequences, the generation of recombinant virus following the transfection of multiple plasmids containing different segments of the large herpesvirus genomes, the growth and propagation of herpesvirus, and the infection of cells with herpesvirus are techniques well known to those of ordinary skill in the art.

In another alternative, an alphavirus (positive, single-stranded RNA virus) vector is used to deliver sptm to target cells. The biology of the prototypic alphavirus, Semliki Forest Virus (SFV), has been studied extensively and gene transfer vectors have been based on the SFV genome (Garoff, H. and Li, K-J. (1998) Curr. Opin. Biotech. 9:464-469). During alphavirus RNA replication, a subgenomic RNA is generated that normally encodes the viral capsid proteins. This subgenomic RNA replicates to higher levels than the full-length genomic RNA, resulting in the overproduction of capsid proteins relative to the viral proteins with enzymatic activity (e.g., protease and polymerase). Similarly, inserting sptm into the alphavirus genome in place of the capsid-coding region results in the production of a large number of sptm RNAs and the synthesis of high levels of SPTM in vector transduced cells. While alphavirus infection is typically associated with cell lysis within a few days, the ability to establish a persistent infection in hamster normal kidney cells (BHK-21) with a variant of Sindbis virus (SIN) indicates that the lytic replication of alphaviruses can be altered to suit the needs of the gene therapy application (Dryga, S.A. et al. (1997) Virology 228:74-83). The wide host range of alphaviruses will allow the introduction of sptm into a variety of cell types. The specific transduction of a subset of cells in a population may require the sorting of cells prior to transduction. The methods of manipulating infectious cDNA clones of alphaviruses, performing alphavirus cDNA and RNA transfections, and performing alphavirus infections, are well known to those with ordinary skill in the art.

Antibodies

Anti-SPTM antibodies may be used to analyze protein expression levels. Such antibodies include, but are not limited to, polyclonal, monoclonal, chimeric, single chain, and Fab fragments. For descriptions of and protocols of antibody technologies, see, e.g., Pound J.D. (1998) Immunochemical Protocols, Humana Press, Totowa, NJ.

The amino acid sequence encoded by the sptm of the Sequence Listing may be analyzed by appropriate software (e.g., LASERGENE NAVIGATOR software, DNASTAR) to determine regions of high immunogenicity. The optimal sequences for immunization are selected from the C-terminus, the N-terminus, and those intervening, hydrophilic regions of the polypeptide which are likely to be exposed to the external environment when the polypeptide is in its natural conformation. Analysis used to select appropriate epitopes is also described by Ausubel (1997, supra, Chapter 11.7). Peptides used for antibody induction do not need to have biological activity; however, they must be

antigenic. Peptides used to induce specific antibodies may have an amino acid sequence consisting of at least five amino acids, preferably at least 10 amino acids, and most preferably at least 15 amino acids. A peptide which mimics an antigenic fragment of the natural polypeptide may be fused with another protein such as keyhole limpet hemocyanin (KLH; Sigma, St. Louis MO) for antibody production. A peptide encompassing an antigenic region may be expressed from an sptm, synthesized as described above, or purified from human cells.

Procedures well known in the art may be used for the production of antibodies. Various hosts including mice, goats, and rabbits, may be immunized by injection with a peptide. Depending on the host species, various adjuvants may be used to increase immunological response.

In one procedure, peptides about 15 residues in length may be synthesized using an ABI 431A peptide synthesizer (Applied Biosystems) using fmoc-chemistry and coupled to KLH (Sigma) by reaction with M-maleimidobenzoyl-N-hydroxysuccinimide ester (Ausubel, 1995, supra). Rabbits are immunized with the peptide-KLH complex in complete Freund's adjuvant. The resulting antisera are tested for antipeptide activity by binding the peptide to plastic, blocking with 1% bovine serum albumin (BSA), reacting with rabbit antisera, washing, and reacting with radioiodinated goat anti-rabbit IgG. Antisera with antipeptide activity are tested for anti-SPTM activity using protocols well known in the art, including ELISA, radioimmunoassay (RIA), and immunoblotting.

In another procedure, isolated and purified peptide may be used to immunize mice (about 100 μg of peptide) or rabbits (about 1 mg of peptide). Subsequently, the peptide is radioiodinated and used to screen the immunized animals' B-lymphocytes for production of antipeptide antibodies. Positive cells are then used to produce hybridomas using standard techniques. About 20 mg of peptide is sufficient for labeling and screening several thousand clones. Hybridomas of interest are detected by screening with radioiodinated peptide to identify those fusions producing peptide-specific monoclonal antibody. In a typical protocol, wells of a multi-well plate (FAST, Becton-Dickinson, Palo Alto, CA) are coated with affinity-purified, specific rabbit-anti-mouse (or suitable anti-species IgG) antibodies at 10 mg/ml. The coated wells are blocked with 1% BSA and washed and exposed to supernatants from hybridomas. After incubation, the wells are exposed to radiolabeled peptide at 1 mg/ml.

Clones producing antibodies bind a quantity of labeled peptide that is detectable above background. Such clones are expanded and subjected to 2 cycles of cloning. Cloned hybridomas are injected into pristane-treated mice to produce ascites, and monoclonal antibody is purified from the ascitic fluid by affinity chromatography on protein A (Amersham Pharmacia Biotech). Several procedures for the production of monoclonal antibodies, including in vitro production, are described in Pound (supra). Monoclonal antibodies with antipeptide activity are tested for anti-SPTM activity using protocols well known in the art, including ELISA, RIA, and immunoblotting.

Antibody fragments containing specific binding sites for an epitope may also be generated. For example, such fragments include, but are not limited to, the F(ab')2 fragments produced by pepsin digestion of the antibody molecule, and the Fab fragments generated by reducing the disulfide bridges of the F(ab')2 fragments. Alternatively, construction of Fab expression libraries in filamentous bacteriophage allows rapid and easy identification of monoclonal fragments with desired specificity (Pound, supra, Chaps. 45-47). Antibodies generated against polypeptide encoded by sptm can be used to purify and characterize full-length SPTM protein and its activity, binding partners, etc.

Assays Using Antibodies

Anti-SPTM antibodies may be used in assays to quantify the amount of SPTM found in a particular human cell. Such assays include methods utilizing the antibody and a label to detect expression level under normal or disease conditions. The peptides and antibodies of the invention may be used with or without modification or labeled by joining them, either covalently or noncovalently, with a reporter molecule.

Protocols for detecting and measuring protein expression using either polyclonal or monoclonal antibodies are well known in the art. Examples include ELISA, RIA, and fluorescent activated cell sorting (FACS). Such immunoassays typically involve the formation of complexes between the SPTM and its specific antibody and the measurement of such complexes. These and other assays are described in Pound (supra).

Without further elaboration, it is believed that one skilled in the art can, using the preceding description, utilize the present invention to its fullest extent. The following preferred specific embodiments are, therefore, to be construed as merely illustrative, and not limitative of the remainder of the disclosure in any way whatsoever.

Without further elaboration, it is believed that one skilled in the art can, using the preceding description, utilize the present invention to its fullest extent. The following preferred specific embodiments are, therefore, to be construed as merely illustrative, and not limitative of the remainder of the disclosure in any way whatsoever.

The disclosures of all patents, applications, and publications mentioned above and below, including U.S. Ser. No. 60/261,865, U.S. Ser. No. 60/262,599, U.S. Ser. No. 60/263,329, U.S. Ser. No. 60/262,209, U.S. Ser. No. 60/263,131, U.S. Ser. No. 60/262,208, U.S. Ser. No. 60/262,164, U.S. Ser. No. 60/263,063, U.S. Ser. No. 60/261,864, U.S. Ser. No. 60/262,760, U.S. Ser. No. 60/261,981, U.S. Ser. No. 60/263,070, U.S. Ser. No. 60/261,979, U.S. Ser. No. 60/263,066, U.S. Ser. No. 60/263,077, U.S. Ser. No. 60/263,076, U.S. Ser. No. 60/263,074, and U.S. Ser. No. 60/263,069, are hereby expressly incorporated by reference.

EXAMPLES

I. Construction of cDNA Libraries

RNA was purchased from CLONTECH Laboratories, Inc. (Palo Alto CA) or isolated from various tissues. Some tissues were homogenized and lysed in guanidinium isothiocyanate, while others were homogenized and lysed in phenol or in a suitable mixture of denaturants, such as TRIZOL (Life Technologies), a monophasic solution of phenol and guanidine isothiocyanate. The resulting lysates were centrifuged over CsCl cushions or extracted with chloroform. RNA was precipitated with either isopropanol or sodium acetate and ethanol, or by other routine methods.

Phenol extraction and precipitation of RNA were repeated as necessary to increase RNA purity. In most cases, RNA was treated with DNase. For most libraries, poly(A+) RNA was isolated using oligo d(T)-coupled paramagnetic particles (Promega Corporation (Promega), Madison WI), OLIGOTEX latex particles (QIAGEN, Inc. (QIAGEN), Valencia CA), or an OLIGOTEX mRNA purification kit (QIAGEN). Alternatively, RNA was isolated directly from tissue lysates using other RNA isolation kits, e.g., the POLY(A)PURE mRNA purification kit (Ambion, Inc., Austin TX).

In some cases, Stratagene was provided with RNA and constructed the corresponding cDNA libraries. Otherwise, cDNA was synthesized and cDNA libraries were constructed with the UNIZAP vector system (Stratagene Cloning Systems, Inc. (Stratagene), La Jolla CA) or SUPERSCRIPT plasmid system (Life Technologies), using the recommended procedures or similar methods known in the art. (See, e.g., Ausubel, 1997, supra, Chapters 5.1 through 6.6.) Reverse transcription was initiated using oligo d(T) or random primers. Synthetic oligonucleotide adapters were ligated to double stranded cDNA, and the cDNA was digested with the appropriate restriction enzyme or enzymes. For most libraries, the cDNA was size-selected (300-1000 bp) using SEPHACRYL S1000, SEPHAROSE CL2B, or SEPHAROSE CL4B column chromatography (Amersham Pharmacia Biotech) or preparative agarose gel electrophoresis. cDNAs were ligated into compatible restriction enzyme sites of the polylinker of a suitable plasmid, e.g., PBLUESCRIPT plasmid (Stratagene), PSPORT1 plasmid (Life Technologies), PCDNA2.1 plasmid (Invitrogen, Carlsbad CA), PBK-CMV plasmid (Stratagene), PCR2-TOPOTA plasmid (Invitrogen), PCMV-ICIS plasmid (Stratagene), pIGEN (Incyte Genomics, Palo Alto CA), pRARE (Incyte Genomics), or pINCY (Incyte Genomics), or derivatives thereof. Recombinant plasmids were transformed into competent E. coli cells including XL1-Blue, XL1-BlueMRF, or SOLR from Stratagene or DH5α, DH10B, or ElectroMAX DH10B from Life Technologies.

II. Isolation of cDNA Clones

Plasmids were recovered from host cells by in vivo excision using the UNIZAP vector system (Stratagene) or by cell lysis. Plasmids were purified using at least one of the following: the Magic or

WIZARD Minipreps DNA purification system (Promega); the AGTC Miniprep purification kit (Edge BioSystems, Gaithersburg MD); and the QIAWELL 8, QIAWELL 8 Plus, and QIAWELL 8 Ultra plasmid purification systems or the R.E.A.L. PREP 96 plasmid purification kit (QIAGEN). Following precipitation, plasmids were resuspended in 0.1 ml of distilled water and stored, with or without lyophilization, at 4°C.

Alternatively, plasmid DNA was amplified from host cell lysates using direct link PCR in a high-throughput format. (Rao, V.B. (1994) Anal. Biochem. 216:1-14.) Host cell lysis and thermal cycling steps were carried out in a single reaction mixture. Samples were processed and stored in 384-well plates, and the concentration of amplified plasmid DNA was quantified fluorometrically using PICOGREEN dye (Molecular Probes, Inc. (Molecular Probes), Eugene OR) and a FLUOROSKAN II fluorescence scanner (Labsystems Oy, Helsinki, Finland).

III. Sequencing and Analysis

cDNA sequencing reactions were processed using standard methods or high-throughput instrumentation such as the ABI CATALYST 800 thermal cycler (Applied Biosystems) or the PTC-200 thermal cycler (MJ Research) in conjunction with the HYDRA microdispenser (Robbins Scientific Corp., Sunnyvale CA) or the MICROLAB 2200 liquid transfer system (Hamilton). cDNA sequencing reactions were prepared using reagents provided by Amersham Pharmacia Biotech or supplied in ABI sequencing kits such as the ABI PRISM BIGDYE Terminator cycle sequencing ready reaction kit (Applied Biosystems). Electrophoretic separation of cDNA sequencing reactions and detection of labeled polynucleotides were carried out using the MEGABACE 1000 DNA sequencing system (Molecular Dynamics); the ABI PRISM 373 or 377 sequencing system (Applied Biosystems) in conjunction with standard ABI protocols and base calling software; or other sequence analysis systems known in the art. Reading frames within the cDNA sequences were identified using standard methods (reviewed in Ausubel, 1997, supra, Chapter 7.7). Some of the cDNA sequences were selected for extension using the techniques disclosed in Example VIII.

IV. Assembly and Analysis of Sequences

Component sequences from chromatograms were subject to PHRED analysis and assigned a quality score. The sequences having at least a required quality score were subject to various pre-processing editing pathways to eliminate, e.g., low quality 3' ends, vector and linker sequences, polyA tails, Alu repeats, mitochondrial and ribosomal sequences, bacterial contamination sequences, and sequences smaller than 50 base pairs. In particular, low-information sequences and repetitive elements (e.g., dinucleotide repeats, Alu repeats, etc.) were replaced by "n's", or masked, to prevent spurious matches.

Processed sequences were then subject to assembly procedures in which the sequences were assigned to gene bins (bins). Each sequence could only belong to one bin. Sequences in each gene bin were assembled to produce consensus sequences (templates). Subsequent new sequences were added to existing bins using BLASTN (v.1.4 WashU) and CROSSMATCH. Candidate pairs were identified as all BLAST hits having a quality score greater than or equal to 150. Alignments of at least 82% local identity were accepted into the bin. The component sequences from each bin were assembled using a version of PHRAP. Bins with several overlapping component sequences were assembled using DEEP PHRAP. The orientation (sense or antisense) of each assembled template was determined based on the number and orientation of its component sequences. Template sequences as disclosed in the sequence listing correspond to sense strand sequences (the "forward" reading frames), to the best determination. The complementary (antisense) strands are inherently disclosed herein. The component sequences which were used to assemble each template consensus sequence are listed in Table 3 along with their positions along the template nucleotide sequences.

Bins were compared against each other and those having local similarity of at least 82% were combined and reassembled. Reassembled bins having templates of insufficient overlap (less than 95% local identity) were re-split. Assembled templates were also subject to analysis by STITCHER/EXON MAPPER algorithms which analyze the probabilities of the presence of splice variants, alternatively spliced exons, splice junctions, differential expression of alternative spliced genes across tissue types or disease states, etc. These resulting bins were subject to several rounds of the above assembly procedures.

Once gene bins were generated based upon sequence alignments, bins were clone joined based upon clone information. If the 5' sequence of one clone was present in one bin and the 3' sequence from the same clone was present in a different bin, it was likely that the two bins actually belonged together in a single bin. The resulting combined bins underwent assembly procedures to regenerate the consensus sequences.

The final assembled templates were subsequently annotated using the following procedure. Template sequences were analyzed using BLASTN (v2.0, NCBI) versus gbpri (GenBank version 126). "Hits" were defined as an exact match having from 95% local identity over 200 base pairs through 100% local identity over 100 base pairs, or a homolog match having an E-value, i.e. a probability score, of $\leq 1 \times 10^{-8}$. The hits were subject to frameshift FASTx versus GENPEPT (GenBank version 126). (See Table 6). In this analysis, a homolog match was defined as having an E-value of $\leq 1 \times 10^{-8}$. The assembly method used above was described in "System and Methods for Analyzing Biomolecular Sequences," U.S.S.N. 09/276,534, filed March 25, 1999, and the LIFESEQ Gold user manual (Incyte) both incorporated by reference herein.

Following assembly, template sequences were subjected to motif, BLAST, and functional

analyses, and categorized in protein hierarchies using methods described in, e.g., "Database System Employing Protein Function Hierarchies for Viewing Biomolecular Sequence Data," U.S. Patent Number 6,023,659; "Relational Database for Storing Biomolecule Information," U.S.S.N. 08/947,845, filed October 9, 1997; "Project-Based Full-Length Biomolecular Sequence Database," U.S. Patent Number 5,953,727; and "Relational Database and System for Storing Information Relating to Biomolecular Sequences," U.S.S.N. 09/034,807, filed March 4, 1998, all of which are incorporated by reference herein.

The template sequences were further analyzed by translating each template in all three forward reading frames and searching each translation against the Pfam database of hidden Markov model-based protein families and domains using the HMMER software package (available to the public from Washington University School of Medicine, St. Louis MO). (See also World Wide Web site http://pfam.wustl.edu/ for detailed descriptions of Pfam protein domains and families.)

Additionally, the template sequences were translated in all three forward reading frames, and each translation was searched against hidden Markov models for signal peptides using the HMMER software package. Construction of hidden Markov models and their usage in sequence analysis has been described. (See, for example, Eddy, S.R. (1996) Curr. Opin. Str. Biol. 6:361-365.) Only those signal peptide hits with a cutoff score of 11 bits or greater are reported. A cutoff score of 11 bits or greater corresponds to at least about 91-94% true-positives in signal peptide prediction. Template sequences were also translated in all three forward reading frames, and each translation was searched against TMHMMER, a program that uses a hidden Markov model (HMM) to delineate transmembrane segments on protein sequences and determine orientation (Sonnhammer, E.L. et al. (1998) Proc. Sixth Intl. Conf. On Intelligent Systems for Mol. Biol., Glasgow et al., eds., The Am. Assoc. for Artificial Intelligence (AAAI) Press, Menlo Park, CA, and MIT Press, Cambridge, MA, pp. 175-182.) Regions of templates which, when translated, contain similarity to signal peptide or transmembrane consensus sequences are reported in Table 2.

Template sequences are further analyzed using the bioinformatics tools listed in Table 6, or using sequence analysis software known in the art such as MACDNASIS PRO software (Hitachi Software Engineering, South San Francisco CA) and LASERGENE software (DNASTAR). Template sequences may be further queried against public databases such as the GenBank rodent, mammalian, vertebrate, prokaryote, and eukaryote databases.

The template sequences were translated to derive the corresponding longest open reading frame as presented by the polypeptide sequences as reported in Table 5. Alternatively, a polypeptide of the invention may begin at any of the methionine residues within the full length translated polypeptide. Polypeptide sequences were subsequently analyzed by querying against the GenBank protein database (GENPEPT, (GenBank version 126)). Full length polynucleotide sequences are also

analyzed using MACDNASIS PRO software (Hitachi Software Engineering, South San Francisco CA) and LASERGENE software (DNASTAR). Polynucleotide and polypeptide sequence alignments are generated using default parameters specified by the CLUSTAL algorithm as incorporated into the MEGALIGN multisequence alignment program (DNASTAR), which also calculates the percent identity between aligned sequences.

Table 5 shows sequences with homology to the polypeptides of the invention as identified by BLAST analysis against the GenBank protein (GENPEPT) database. Column 1 shows the polypeptide sequence identification number (SEQ ID NO:) for the polypeptide segments of the invention. Column 2 shows the reading frame used in the translation of the polynucleotide sequences encoding the polypeptide segments. Column 3 shows the length of the translated polypeptide segments. Columns 4 and 5 show the start and stop nucleotide positions of the polynucleotide sequences encoding the polypeptide segments. Column 6 shows the GenBank identification number (GI Number) of the nearest GenBank homolog. Column 7 shows the probability score for the match between each polypeptide and its GenBank homolog. Column 8 shows the annotation of the GenBank homolog.

V. Analysis of Polynucleotide Expression

Northern analysis is a laboratory technique used to detect the presence of a transcript of a gene and involves the hybridization of a labeled nucleotide sequence to a membrane on which RNAs from a particular cell type or tissue have been bound. (See, e.g., Sambrook, supra, ch. 7; Ausubel, 1995, supra, ch. 4 and 16.)

Analogous computer techniques applying BLAST were used to search for identical or related molecules in cDNA databases such as GenBank or LIFESEQ (Incyte Genomics). This analysis is much faster than multiple membrane-based hybridizations. In addition, the sensitivity of the computer search can be modified to determine whether any particular match is categorized as exact or similar. The basis of the search is the product score, which is defined as:

$$\frac{\text{BLAST Score x Percent Identity}}{5 \text{ x minimum } \{\text{length(Seq. 1), length(Seq. 2)}\}}$$

The product score takes into account both the degree of similarity between two sequences and the length of the sequence match. The product score is a normalized value between 0 and 100, and is calculated as follows: the BLAST score is multiplied by the percent nucleotide identity and the product is divided by (5 times the length of the shorter of the two sequences). The BLAST score is calculated by assigning a score of +5 for every base that matches in a high-scoring segment pair

(HSP), and -4 for every mismatch. Two sequences may share more than one HSP (separated by gaps). If there is more than one HSP, then the pair with the highest BLAST score is used to calculate the product score. The product score represents a balance between fractional overlap and quality in a BLAST alignment. For example, a product score of 100 is produced only for 100% identity over the entire length of the shorter of the two sequences being compared. A product score of 70 is produced either by 100% identity and 70% overlap at one end, or by 88% identity and 100% overlap at the other. A product score of 50 is produced either by 100% identity and 50% overlap at one end, or 79% identity and 100% overlap.

Alternatively, polynucleotide sequences encoding SPTM are analyzed with respect to the tissue sources from which they were derived. Polynucleotide sequences encoding SPTM were assembled, at least in part, with overlapping Incyte cDNA sequences. Each cDNA sequence is derived from a cDNA library constructed from a human tissue. Each human tissue is classified into one of the following organ/tissue categories: cardiovascular system; connective tissue; digestive system; embryonic structures; endocrine system; exocrine glands; genitalia, female; genitalia, male; germ cells; hemic and immune system; liver; musculoskeletal system; nervous system; pancreas; respiratory system; sense organs; skin; stomatognathic system; unclassified/mixed; or urinary tract. The number of libraries in each category for each polynucleotide sequence encoding SPTM is counted and divided by the total number of libraries across all categories for each polynucleotide sequence encoding SPTM. Similarly, each human tissue is classified into one of the following disease/condition categories: cancer, cell line, developmental, inflammation, neurological, trauma, cardiovascular, pooled, and other, and the number of libraries in each category for each polynucleotide sequence encoding SPTM is counted and divided by the total number of libraries across all categories for each polynucleotide sequence encoding SPTM. The resulting percentages reflect the tissue-specific and disease-specific expression of cDNA encoding SPTM. Percentage values of tissue-specific expression are reported in . cDNA sequences and cDNA library/tissue information are found in the LIFESEQ GOLD database (Incyte Genomics, Palo Alto CA).

VI. Tissue Distribution Profiling

A tissue distribution profile is determined for each template by compiling the cDNA library tissue classifications of its component cDNA sequences. Each component sequence, is derived from a cDNA library constructed from a human tissue. Each human tissue is classified into one of the following categories: cardiovascular system; connective tissue; digestive system; embryonic structures; endocrine system; exocrine glands; genitalia, female; genitalia, male; germ cells; hemic and immune system; liver; musculoskeletal system; nervous system; pancreas; respiratory system; sense organs; skin; stomatognathic system; unclassified/mixed; or urinary tract. Template sequences,

component sequences, and cDNA library/tissue information are found in the LIFESEQ GOLD database (Incyte Genomics, Palo Alto CA).

Table 4 shows the tissue distribution profile for the templates of the invention. For each template, the three most frequently observed tissue categories are shown in column 3, along with the percentage of component sequences belonging to each category. Only tissue categories with percentage values of ≥10% are shown. A tissue distribution of "widely distributed" in column 3 indicates percentage values of <10% in all tissue categories.

VII. Transcript Image Analysis

Transcript images are generated as described in Seilhamer et al., "Comparative Gene Transcript Analysis," U.S. Patent Number 5,840,484, incorporated herein by reference.

VIII. Extension of Polynucleotide Sequences and Isolation of a Full-length cDNA

Oligonucleotide primers designed using an sptm of the Sequence Listing are used to extend the nucleic acid sequence. One primer is synthesized to initiate 5' extension of the template, and the other primer, to initiate 3' extension of the template. The initial primers may be designed using OLIGO 4.06 software (National Biosciences, Inc. (National Biosciences), Plymouth MN), or another appropriate program, to be about 22 to 30 nucleotides in length, to have a GC content of about 50% or more, and to anneal to the target sequence at temperatures of about 68°C to about 72°C. Any stretch of nucleotides which would result in hairpin structures and primer-primer dimerizations are avoided. Selected human cDNA libraries are used to extend the sequence. If more than one extension is necessary or desired, additional or nested sets of primers are designed.

High fidelity amplification is obtained by PCR using methods well known in the art. PCR is performed in 96-well plates using the PTC-200 thermal cycler (MJ Research). The reaction mix contains DNA template, 200 nmol of each primer, reaction buffer containing Mg^{2+}, $(NH_4)_2SO_4$, and ß-mercaptoethanol, Taq DNA polymerase (Amersham Pharmacia Biotech), ELONGASE enzyme (Life Technologies), and Pfu DNA polymerase (Stratagene), with the following parameters for primer pair PCI A and PCI B: Step 1: 94°C, 3 min; Step 2: 94°C, 15 sec; Step 3: 60°C, 1 min; Step 4: 68°C, 2 min; Step 5: Steps 2, 3, and 4 repeated 20 times; Step 6: 68°C, 5 min; Step 7: storage at 4°C. In the alternative, the parameters for primer pair T7 and SK+ are as follows: Step 1: 94°C, 3 min; Step 2: 94°C, 15 sec; Step 3: 57°C, 1 min; Step 4: 68°C, 2 min; Step 5: Steps 2, 3, and 4 repeated 20 times; Step 6: 68°C, 5 min; Step 7: storage at 4°C.

The concentration of DNA in each well is determined by dispensing 100 µl PICOGREEN quantitation reagent (0.25% (v/v); Molecular Probes) dissolved in 1X Tris-EDTA (TE) and 0.5 µl of undiluted PCR product into each well of an opaque fluorimeter plate (Corning Incorporated

(Corning), Corning NY), allowing the DNA to bind to the reagent. The plate is scanned in a FLUOROSKAN II (Labsystems Oy) to measure the fluorescence of the sample and to quantify the concentration of DNA. A 5 μl to 10 μl aliquot of the reaction mixture is analyzed by electrophoresis on a 1 % agarose mini-gel to determine which reactions are successful in extending the sequence.

The extended nucleotides are desalted and concentrated, transferred to 384-well plates, digested with CviJI cholera virus endonuclease (Molecular Biology Research, Madison WI), and sonicated or sheared prior to religation into pUC 18 vector (Amersham Pharmacia Biotech). For shotgun sequencing, the digested nucleotides are separated on low concentration (0.6 to 0.8%) agarose gels, fragments are excised, and agar digested with AGAR ACE (Promega). Extended clones are religated using T4 ligase (New England Biolabs, Inc., Beverly MA) into pUC 18 vector (Amersham Pharmacia Biotech), treated with Pfu DNA polymerase (Stratagene) to fill-in restriction site overhangs, and transfected into competent E. coli cells. Transformed cells are selected on antibiotic-containing media, individual colonies are picked and cultured overnight at 37°C in 384-well plates in LB/2x carbenicillin liquid media.

The cells are lysed, and DNA is amplified by PCR using Taq DNA polymerase (Amersham Pharmacia Biotech) and Pfu DNA polymerase (Stratagene) with the following parameters: Step 1: 94°C, 3 min; Step 2: 94°C, 15 sec; Step 3: 60°C, 1 min; Step 4: 72°C, 2 min; Step 5: steps 2, 3, and 4 repeated 29 times; Step 6: 72°C, 5 min; Step 7: storage at 4°C. DNA is quantified by PICOGREEN reagent (Molecular Probes) as described above. Samples with low DNA recoveries are reamplified using the same conditions as described above. Samples are diluted with 20% dimethysulfoxide (1:2, v/v), and sequenced using DYENAMIC energy transfer sequencing primers and the DYENAMIC DIRECT kit (Amersham Pharmacia Biotech) or the ABI PRISM BIGDYE Terminator cycle sequencing ready reaction kit (Applied Biosystems).

In like manner, the sptm is used to obtain regulatory sequences (promoters, introns, and enhancers) using the procedure above, oligonucleotides designed for such extension, and an appropriate genomic library.

IX. Labeling of Probes and Southern Hybridization Analyses

Hybridization probes derived from the sptm of the Sequence Listing are employed for screening cDNAs, mRNAs, or genomic DNA. The labeling of probe nucleotides between 100 and 1000 nucleotides in length is specifically described, but essentially the same procedure may be used with larger cDNA fragments. Probe sequences are labeled at room temperature for 30 minutes using a T4 polynucleotide kinase, γ^{32}P-ATP, and 0.5X One-Phor-All Plus (Amersham Pharmacia Biotech) buffer and purified using a ProbeQuant G-50 Microcolumn (Amersham Pharmacia Biotech). The probe mixture is diluted to 10^7 dpm/μg/ml hybridization buffer and used in a typical membrane-based

hybridization analysis.

The DNA is digested with a restriction endonuclease such as Eco RV and is electrophoresed through a 0.7% agarose gel. The DNA fragments are transferred from the agarose to nylon membrane (NYTRAN Plus, Schleicher & Schuell, Inc., Keene NH) using procedures specified by the manufacturer of the membrane. Prehybridization is carried out for three or more hours at 68°C, and hybridization is carried out overnight at 68°C. To remove non-specific signals, blots are sequentially washed at room temperature under increasingly stringent conditions, up to 0.1x saline sodium citrate (SSC) and 0.5% sodium dodecyl sulfate. After the blots are placed in a PHOSPHORIMAGER cassette (Molecular Dynamics) or are exposed to autoradiography film, hybridization patterns of standard and experimental lanes are compared. Essentially the same procedure is employed when screening RNA.

X. Chromosome Mapping of sptm

The cDNA sequences which were used to assemble SEQ ID NO:1-75 are compared with sequences from the Incyte LIFESEQ database and public domain databases using BLAST and other implementations of the Smith-Waterman algorithm. Sequences from these databases that match SEQ ID NO:1-75 are assembled into clusters of contiguous and overlapping sequences using assembly algorithms such as PHRAP (Table 6). Radiation hybrid and genetic mapping data available from public resources such as the Stanford Human Genome Center (SHGC), Whitehead Institute for Genome Research (WIGR), and Généthon are used to determine if any of the clustered sequences have been previously mapped. Inclusion of a mapped sequence in a cluster will result in the assignment of all sequences of that cluster, including its particular SEQ ID NO:, to that map location. The genetic map locations of SEQ ID NO:1-75 are described as ranges, or intervals, of human chromosomes. The map position of an interval, in centiMorgans, is measured relative to the terminus of the chromosome's p-arm. (The centiMorgan (cM) is a unit of measurement based on recombination frequencies between chromosomal markers. On average, 1 cM is roughly equivalent to 1 megabase (Mb) of DNA in humans, although this can vary widely due to hot and cold spots of recombination.) The cM distances are based on genetic markers mapped by Généthon which provide boundaries for radiation hybrid markers whose sequences were included in each of the clusters.

XI. Microarray Analysis

Probe Preparation from Tissue or Cell Samples

Total RNA is isolated from tissue samples using the guanidinium thiocyanate method and polyA$^+$ RNA is purified using the oligo (dT) cellulose method. Each polyA$^+$ RNA sample is reverse transcribed using MMLV reverse-transcriptase, 0.05 pg/μl oligo-dT primer (21mer), 1X first strand

buffer, 0.03 units/μl RNase inhibitor, 500 μM dATP, 500 μM dGTP, 500 μM dTTP, 40 μM dCTP, 40 μM dCTP-Cy3 (BDS) or dCTP-Cy5 (Amersham Pharmacia Biotech). The reverse transcription reaction is performed in a 25 ml volume containing 200 ng polyA$^+$ RNA with GEMBRIGHT kits (Incyte). Specific control polyA$^+$ RNAs are synthesized by in vitro transcription from non-coding yeast genomic DNA (W. Lei, unpublished). As quantitative controls, the control mRNAs at 0.002 ng, 0.02 ng, 0.2 ng, and 2 ng are diluted into reverse transcription reaction at ratios of 1:100,000, 1:10,000, 1:1000, 1:100 (w/w) to sample mRNA respectively. The control mRNAs are diluted into reverse transcription reaction at ratios of 1:3, 3:1, 1:10, 10:1, 1:25, 25:1 (w/w) to sample mRNA differential expression patterns. After incubation at 37° C for 2 hr, each reaction sample (one with Cy3 and another with Cy5 labeling) is treated with 2.5 ml of 0.5M sodium hydroxide and incubated for 20 minutes at 85° C to the stop the reaction and degrade the RNA. Probes are purified using two successive CHROMA SPIN 30 gel filtration spin columns (CLONTECH Laboratories, Inc. (CLONTECH), Palo Alto CA) and after combining, both reaction samples are ethanol precipitated using 1 ml of glycogen (1 mg/ml), 60 ml sodium acetate, and 300 ml of 100% ethanol. The probe is then dried to completion using a SpeedVAC (Savant Instruments Inc., Holbrook NY) and resuspended in 14 μl 5X SSC/0.2% SDS.

Microarray Preparation

Sequences of the present invention are used to generate array elements. Each array element is amplified from bacterial cells containing vectors with cloned cDNA inserts. PCR amplification uses primers complementary to the vector sequences flanking the cDNA insert. Array elements are amplified in thirty cycles of PCR from an initial quantity of 1-2 ng to a final quantity greater than 5 μg. Amplified array elements are then purified using SEPHACRYL-400 (Amersham Pharmacia Biotech).

Purified array elements are immobilized on polymer-coated glass slides. Glass microscope slides (Corning) are cleaned by ultrasound in 0.1% SDS and acetone, with extensive distilled water washes between and after treatments. Glass slides are etched in 4% hydrofluoric acid (VWR Scientific Products Corporation (VWR), West Chester, PA), washed extensively in distilled water, and coated with 0.05% aminopropyl silane (Sigma) in 95% ethanol. Coated slides are cured in a 110°C oven.

Array elements are applied to the coated glass substrate using a procedure described in US Patent No. 5,807,522, incorporated herein by reference. 1 μl of the array element DNA, at an average concentration of 100 ng/μl, is loaded into the open capillary printing element by a high-speed robotic apparatus. The apparatus then deposits about 5 nl of array element sample per slide.

Microarrays are UV-crosslinked using a STRATALINKER UV-crosslinker (Stratagene).

Microarrays are washed at room temperature once in 0.2% SDS and three times in distilled water. Non-specific binding sites are blocked by incubation of microarrays in 0.2% casein in phosphate buffered saline (PBS) (Tropix, Inc., Bedford, MA) for 30 minutes at 60° C followed by washes in 0.2% SDS and distilled water as before.

Hybridization

Hybridization reactions contain 9 μl of probe mixture consisting of 0.2 μg each of Cy3 and Cy5 labeled cDNA synthesis products in 5X SSC, 0.2% SDS hybridization buffer. The probe mixture is heated to 65° C for 5 minutes and is aliquoted onto the microarray surface and covered with an 1.8 cm^2 coverslip. The arrays are transferred to a waterproof chamber having a cavity just slightly larger than a microscope slide. The chamber is kept at 100% humidity internally by the addition of 140 μl of 5x SSC in a corner of the chamber. The chamber containing the arrays is incubated for about 6.5 hours at 60° C. The arrays are washed for 10 min at 45° C in a first wash buffer (1X SSC, 0.1% SDS), three times for 10 minutes each at 45° C in a second wash buffer (0.1X SSC), and dried.

Detection

Reporter-labeled hybridization complexes are detected with a microscope equipped with an Innova 70 mixed gas 10 W laser (Coherent, Inc., Santa Clara CA) capable of generating spectral lines at 488 nm for excitation of Cy3 and at 632 nm for excitation of Cy5. The excitation laser light is focused on the array using a 20X microscope objective (Nikon, Inc., Melville NY). The slide containing the array is placed on a computer-controlled X-Y stage on the microscope and raster-scanned past the objective. The 1.8 cm x 1.8 cm array used in the present example is scanned with a resolution of 20 micrometers.

In two separate scans, a mixed gas multiline laser excites the two fluorophores sequentially. Emitted light is split, based on wavelength, into two photomultiplier tube detectors (PMT R1477, Hamamatsu Photonics Systems, Bridgewater NJ) corresponding to the two fluorophores. Appropriate filters positioned between the array and the photomultiplier tubes are used to filter the signals. The emission maxima of the fluorophores used are 565 nm for Cy3 and 650 nm for Cy5. Each array is typically scanned twice, one scan per fluorophore using the appropriate filters at the laser source, although the apparatus is capable of recording the spectra from both fluorophores simultaneously.

The sensitivity of the scans is typically calibrated using the signal intensity generated by a cDNA control species added to the probe mix at a known concentration. A specific location on the array contains a complementary DNA sequence, allowing the intensity of the signal at that location to be correlated with a weight ratio of hybridizing species of 1:100,000. When two probes from different sources (e.g., representing test and control cells), each labeled with a different fluorophore,

are hybridized to a single array for the purpose of identifying genes that are differentially expressed, the calibration is done by labeling samples of the calibrating cDNA with the two fluorophores and adding identical amounts of each to the hybridization mixture.

The output of the photomultiplier tube is digitized using a 12-bit RTI-835H analog-to-digital (A/D) conversion board (Analog Devices, Inc., Norwood, MA) installed in an IBM-compatible PC computer. The digitized data are displayed as an image where the signal intensity is mapped using a linear 20-color transformation to a pseudocolor scale ranging from blue (low signal) to red (high signal). The data is also analyzed quantitatively. Where two different fluorophores are excited and measured simultaneously, the data are first corrected for optical crosstalk (due to overlapping emission spectra) between the fluorophores using each fluorophore's emission spectrum.

A grid is superimposed over the fluorescence signal image such that the signal from each spot is centered in each element of the grid. The fluorescence signal within each element is then integrated to obtain a numerical value corresponding to the average intensity of the signal. The software used for signal analysis is the GEMTOOLS gene expression analysis program (Incyte).

XII. Complementary Nucleic Acids

Sequences complementary to the sptm are used to detect, decrease, or inhibit expression of the naturally occurring nucleotide. The use of oligonucleotides comprising from about 15 to 30 base pairs is typical in the art. However, smaller or larger sequence fragments can also be used. Appropriate oligonucleotides are designed from the sptm using OLIGO 4.06 software (National Biosciences) or other appropriate programs and are synthesized using methods standard in the art or ordered from a commercial supplier. To inhibit transcription, a complementary oligonucleotide is designed from the most unique 5' sequence and used to prevent transcription factor binding to the promoter sequence. To inhibit translation, a complementary oligonucleotide is designed to prevent ribosomal binding and processing of the transcript.

XIII. Expression of SPTM

Expression and purification of SPTM is accomplished using bacterial or virus-based expression systems. For expression of SPTM in bacteria, DNA encoding SPTM is subcloned into an appropriate vector containing an antibiotic resistance gene and an inducible promoter that directs high levels of cDNA transcription. Examples of such promoters include, but are not limited to, the *trp-lac* (*tac*) hybrid promoter and the T5 or T7 bacteriophage promoter in conjunction with the *lac* operator regulatory element. Recombinant vectors are transformed into suitable bacterial hosts, e.g., BL21(DE3). Antibiotic resistant bacteria express SPTM upon induction with isopropyl beta-D-thiogalactopyranoside (IPTG). Expression of SPTM in eukaryotic cells is achieved by infecting

insect or mammalian cell lines with recombinant Autographica californica nuclear polyhedrosis virus (AcMNPV), commonly known as baculovirus. The nonessential polyhedrin gene of baculovirus is replaced with cDNA encoding SPTM by either homologous recombination or bacterial-mediated transposition involving transfer plasmid intermediates. Viral infectivity is maintained and the strong polyhedrin promoter drives high levels of cDNA transcription. Recombinant baculovirus is used to infect Spodoptera frugiperda (Sf9) insect cells in most cases, or human hepatocytes, in some cases. Infection of the latter requires additional genetic modifications to baculovirus. (See e.g., Engelhard, supra; and Sandig, supra.)

In most expression systems, SPTM is synthesized as a fusion protein with, e.g., glutathione S-transferase (GST) or a peptide epitope tag, such as FLAG or 6-His, permitting rapid, single-step, affinity-based purification of recombinant fusion protein from crude cell lysates. GST, a 26-kilodalton enzyme from Schistosoma japonicum, enables the purification of fusion proteins on immobilized glutathione under conditions that maintain protein activity and antigenicity (Amersham Pharmacia Biotech). Following purification, the GST moiety can be proteolytically cleaved from SPTM at specifically engineered sites. FLAG, an 8-amino acid peptide, enables immunoaffinity purification using commercially available monoclonal and polyclonal anti-FLAG antibodies (Eastman Kodak Company, Rochester NY). 6-His, a stretch of six consecutive histidine residues, enables purification on metal-chelate resins (QIAGEN). Methods for protein expression and purification are discussed in Ausubel (1995, supra, Chapters 10 and 16). Purified SPTM obtained by these methods can be used directly in the following activity assay.

XIV. Demonstration of SPTM Activity

An assay for SPTM activity measures the expression of SPTM on the cell surface. cDNA encoding SPTM is subcloned into an appropriate mammalian expression vector suitable for high levels of cDNA expression. The resulting construct is transfected into a nonhuman cell line such as NIH3T3. Cell surface proteins are labeled with biotin using methods known in the art. Immunoprecipitations are performed using SPTM-specific antibodies, and immunoprecipitated samples are analyzed using SDS-PAGE and immunoblotting techniques. The ratio of labeled immunoprecipitant to unlabeled immunoprecipitant is proportional to the amount of SPTM expressed on the cell surface.

Alternatively, an assay for SPTM activity measures the amount of SPTM in secretory, membrane-bound organelles. Transfected cells as described above are harvested and lysed. The lysate is fractionated using methods known to those of skill in the art, for example, sucrose gradient ultracentrifugation. Such methods allow the isolation of subcellular components such as the Golgi apparatus, ER, small membrane-bound vesicles, and other secretory organelles.

Immunoprecipitations from fractionated and total cell lysates are performed using SPTM-specific antibodies, and immunoprecipitated samples are analyzed using SDS-PAGE and immunoblotting techniques. The concentration of SPTM in secretory organelles relative to SPTM in total cell lysate is proportional to the amount of SPTM in transit through the secretory pathway.

XV. Functional Assays

SPTM function is assessed by expressing sptm at physiologically elevated levels in mammalian cell culture systems. cDNA is subcloned into a mammalian expression vector containing a strong promoter that drives high levels of cDNA expression. Vectors of choice include pCMV SPORT (Life Technologies) and pCR3.1 (Invitrogen Corporation, Carlsbad CA), both of which contain the cytomegalovirus promoter. 5-10 μg of recombinant vector are transiently transfected into a human cell line, preferably of endothelial or hematopoietic origin, using either liposome formulations or electroporation. 1-2 μg of an additional plasmid containing sequences encoding a marker protein are co-transfected.

Expression of a marker protein provides a means to distinguish transfected cells from nontransfected cells and is a reliable predictor of cDNA expression from the recombinant vector. Marker proteins of choice include, e.g., Green Fluorescent Protein (GFP; CLONTECH), CD64, or a CD64-GFP fusion protein. Flow cytometry (FCM), an automated laser optics-based technique, is used to identify transfected cells expressing GFP or CD64-GFP and to evaluate the apoptotic state of the cells and other cellular properties.

FCM detects and quantifies the uptake of fluorescent molecules that diagnose events preceding or coincident with cell death. These events include changes in nuclear DNA content as measured by staining of DNA with propidium iodide; changes in cell size and granularity as measured by forward light scatter and 90 degree side light scatter; down-regulation of DNA synthesis as measured by decrease in bromodeoxyuridine uptake; alterations in expression of cell surface and intracellular proteins as measured by reactivity with specific antibodies; and alterations in plasma membrane composition as measured by the binding of fluorescein-conjugated Annexin V protein to the cell surface. Methods in flow cytometry are discussed in Ormerod, M. G. (1994) Flow Cytometry, Oxford, New York NY.

The influence of SPTM on gene expression can be assessed using highly purified populations of cells transfected with sequences encoding SPTM and either CD64 or CD64-GFP. CD64 and CD64-GFP are expressed on the surface of transfected cells and bind to conserved regions of human immunoglobulin G (IgG). Transfected cells are efficiently separated from nontransfected cells using magnetic beads coated with either human IgG or antibody against CD64 (DYNAL, Inc., Lake Success NY). mRNA can be purified from the cells using methods well known by those of skill in the art.

Expression of mRNA encoding SPTM and other genes of interest can be analyzed by northern analysis or microarray techniques.

XVI. Production of Antibodies

SPTM substantially purified using polyacrylamide gel electrophoresis (PAGE; see, e.g., Harrington, M.G. (1990) Methods Enzymol. 182:488-495), or other purification techniques, is used to immunize rabbits and to produce antibodies using standard protocols.

Alternatively, the SPTM amino acid sequence is analyzed using LASERGENE software (DNASTAR) to determine regions of high immunogenicity, and a corresponding peptide is synthesized and used to raise antibodies by means known to those of skill in the art. Methods for selection of appropriate epitopes, such as those near the C-terminus or in hydrophilic regions are well described in the art. (See, e.g., Ausubel, 1995, supra, Chapter 11.)

Typically, peptides 15 residues in length are synthesized using an ABI 431A peptide synthesizer (Applied Biosystems) using fmoc-chemistry and coupled to KLH (Sigma) by reaction with N-maleimidobenzoyl-N-hydroxysuccinimide ester (MBS) to increase immunogenicity. (See, e.g., Ausubel, supra.) Rabbits are immunized with the peptide-KLH complex in complete Freund's adjuvant. Resulting antisera are tested for antipeptide activity by, for example, binding the peptide to plastic, blocking with 1% BSA, reacting with rabbit antisera, washing, and reacting with radio-iodinated goat anti-rabbit IgG. Antisera with antipeptide activity are tested for anti-SPTM activity using protocols well known in the art, including ELISA, RIA, and immunoblotting.

XVII. Purification of Naturally Occurring SPTM Using Specific Antibodies

Naturally occurring or recombinant SPTM is substantially purified by immunoaffinity chromatography using antibodies specific for SPTM. An immunoaffinity column is constructed by covalently coupling anti-SPTM antibody to an activated chromatographic resin, such as CNBr-activated SEPHAROSE (Amersham Pharmacia Biotech). After the coupling, the resin is blocked and washed according to the manufacturer's instructions.

Media containing SPTM are passed over the immunoaffinity column, and the column is washed under conditions that allow the preferential absorbance of SPTM (e.g., high ionic strength buffers in the presence of detergent). The column is eluted under conditions that disrupt antibody/SPTM binding (e.g., a buffer of pH 2 to pH 3, or a high concentration of a chaotrope, such as urea or thiocyanate ion), and SPTM is collected.

XVIII. Identification of Molecules Which Interact with SPTM

SPTM, or biologically active fragments thereof, are labeled with ^{125}I Bolton-Hunter reagent.

(See, e.g., Bolton, A.E. and W.M. Hunter (1973) Biochem. J. 133:529-539.) Candidate molecules previously arrayed in the wells of a multi-well plate are incubated with the labeled SPTM, washed, and any wells with labeled SPTM complex are assayed. Data obtained using different concentrations of SPTM are used to calculate values for the number, affinity, and association of SPTM with the candidate molecules.

Alternatively, molecules interacting with SPTM are analyzed using the yeast two-hybrid system as described in Fields, S. and O. Song (1989) Nature 340:245-246, or using commercially available kits based on the two-hybrid system, such as the MATCHMAKER system (CLONTECH).

SPTM may also be used in the PATHCALLING process (CuraGen Corp., New Haven CT) which employs the yeast two-hybrid system in a high-throughput manner to determine all interactions between the proteins encoded by two large libraries of genes (Nandabalan, K. et al. (2000) U.S. Patent No. 6,057,101).

All publications and patents mentioned in the above specification are herein incorporated by reference. Various modifications and variations of the described method and system of the invention will be apparent to those skilled in the art without departing from the scope and spirit of the invention. Although the invention has been described in connection with specific preferred embodiments, it should be understood that the invention as claimed should not be unduly limited to such specific embodiments. Indeed, various modifications of the above-described modes for carrying out the invention which are obvious to those skilled in the field of molecular biology or related fields are intended to be within the scope of the following claims.

TABLE 1

SEQ ID NO:	Template ID	SEQ ID NO:	ORF ID
1	LI:418914.1:2001JAN12	76	LI:418914.1.orf1:2001JAN12
2	LI:246108.7:2001JAN12	77	LI:246108.7.orf3:2001JAN12
3	LI:204262.2:2001JAN12	78	LI:204262.2.orf1:2001JAN12
4	LI:331661.1:2001JAN12	79	LI:331661.1.orf1:2001JAN12
5	LI:335074.1:2001JAN12	80	LI:335074.1.orf1:2001JAN12
6	LI:154608.1:2001JAN12	81	LI:154608.1.orf2:2001JAN12
7	LI:462889.1:2001JAN12	82	LI:462889.1.orf2:2001JAN12
8	LI:236680.2:2001JAN12	83	LI:236680.2.orf2:2001JAN12
9	LI:228186.1:2001JAN12	84	LI:228186.1.orf2:2001JAN12
10	LI:721233.1:2001JAN12	85	LI:721233.1.orf1:2001JAN12
11	LI:291759.2:2001JAN12	86	LI:291759.2.orf2:2001JAN12
12	LI:292613.17:2001JAN12	87	LI:292613.17.orf1:2001JAN12
13	LI:412959.15:2001JAN12	88	LI:412959.15.orf3:2001JAN12
14	LI:482512.3:2001JAN12	89	LI:482512.3.orf1:2001JAN12
14	LI:482512.3:2001JAN12	90	LI:482512.3.orf2:2001JAN12
15	LI:413231.6:2001JAN12	91	LI:413231.6.orf1:2001JAN12
16	LI:203383.1:2001JAN12	92	LI:203383.1.orf1:2001JAN12
17	LI:133186.4:2001JAN12	93	LI:133186.4.orf3:2001JAN12
18	LI:238576.2:2001JAN12	94	LI:238576.2.orf1:2001JAN12
19	LI:903914.3:2001JAN12	95	LI:903914.3.orf2:2001JAN12
20	LI:150817.1:2001JAN12	96	LI:150817.1.orf2:2001JAN12
21	LI:219627.1:2001JAN12	97	LI:219627.1.orf3:2001JAN12
22	LI:197812.4:2001JAN12	98	LI:197812.4.orf3:2001JAN12
23	LI:101525.1:2001JAN12	99	LI:101525.1.orf2:2001JAN12
24	LI:891123.1:2001JAN12	100	LI:891123.1.orf3:2001JAN12
25	LI:813500.1:2001JAN12	101	LI:813500.1.orf1:2001JAN12
26	LI:1037251.1:2001JAN12	102	LI:1037251.1.orf1:2001JAN12
27	LI:2032187.1:2001JAN12	103	LI:2032187.1.orf2:2001JAN12
28	LI:347572.1:2001JAN12	104	LI:347572.1.orf3:2001JAN12
29	LI:007788.1:2001JAN12	105	LI:007788.1.orf1:2001JAN12
30	LI:336872.1:2001JAN12	106	LI:336872.1.orf2:2001JAN12
30	LI:336872.1:2001JAN12	107	LI:336872.1.orf3:2001JAN12
31	LI:1143291.1:2001JAN12	108	LI:1143291.1.orf2:2001JAN12
32	LI:093477.1:2001JAN12	109	LI:093477.1.orf1:2001JAN12
33	LI:222105.1:2001JAN12	110	LI:222105.1.orf2:2001JAN12
34	LI:816737.2:2001JAN12	111	LI:816737.2.orf3:2001JAN12
35	LI:475524.1:2001JAN12	112	LI:475524.1.orf2:2001JAN12
36	LI:383639.1:2001JAN12	113	LI:383639.1.orf1:2001JAN12
37	LI:814346.1:2001JAN12	114	LI:814346.1.orf2:2001JAN12
38	LI:898195.6:2001JAN12	115	LI:898195.6.orf2:2001JAN12
39	LI:210497.2:2001JAN12	116	LI:210497.2.orf3:2001JAN12
40	LI:110297.4:2001JAN12	117	LI:110297.4.orf2:2001JAN12
41	LI:2051312.1:2001JAN12	118	LI:2051312.1.orf1:2001JAN12
42	LI:350272.2:2001JAN12	119	LI:350272.2.orf3:2001JAN12
43	LI:1085472.4:2001JAN12	120	LI:1085472.4.orf1:2001JAN12
44	LI:1190272.1:2001JAN12	121	LI:1190272.1.orf2:2001JAN12
45	LI:1086797.1:2001JAN12	122	LI:1086797.1.orf1:2001JAN12
46	LI:1144466.1:2001JAN12	123	LI:1144466.1.orf1:2001JAN12
47	LI:1147914.1:2001JAN12	124	LI:1147914.1.orf3:2001JAN12
48	LI:758086.1:2001JAN12	125	LI:758086.1.orf2:2001JAN12

TABLE 1

SEQ ID NO:	Template ID	SEQ ID NO:	ORF ID
49	LI:765245.5:2001JAN12	126	LI:765245.5.orf3:2001JAN12
50	LI:335608.2:2001JAN12	127	LI:335608.2.orf3:2001JAN12
51	LI:405795.1:2001JAN12	128	LI:405795.1.orf3:2001JAN12
52	LI:014872.1:2001JAN12	129	LI:014872.1.orf3:2001JAN12
53	LI:239245.3:2001JAN12	130	LI:239245.3.orf3:2001JAN12
54	LI:142384.5:2001JAN12	131	LI:142384.5.orf3:2001JAN12
55	LI:2068768.1:2001JAN12	132	LI:2068768.1.orf3:2001JAN12
56	LI:2118074.1:2001JAN12	133	LI:2118074.1.orf3:2001JAN12
57	LI:1189068.4:2001JAN12	134	LI:1189068.4.orf2:2001JAN12
58	LI:2118704.1:2001JAN12	135	LI:2118704.1.orf1:2001JAN12
59	LI:031700.2:2001JAN12	136	LI:031700.2.orf3:2001JAN12
60	LI:2120122.1:2001JAN12	137	LI:2120122.1.orf1:2001JAN12
61	LI:816174.1:2001JAN12	138	LI:816174.1.orf1:2001JAN12
62	LI:1189569.11:2001JAN12	139	LI:1189569.11.orf2:2001JAN12
63	LI:413584.1:2001JAN12	140	LI:413584.1.orf1:2001JAN12
64	LI:791042.1:2001JAN12	141	LI:791042.1.orf2:2001JAN12
65	LI:1167140.1:2001JAN12	142	LI:1167140.1.orf3:2001JAN12
66	LI:054831.1:2001JAN12	143	LI:054831.1.orf2:2001JAN12
67	LI:1175083.1:2001JAN12	144	LI:1175083.1.orf2:2001JAN12
68	LI:2122897.2:2001JAN12	145	LI:2122897.2.orf2:2001JAN12
69	LI:2053195.3:2001JAN12	146	LI:2053195.3.orf3:2001JAN12
70	LI:439397.6:2001JAN12	147	LI:439397.6.orf2:2001JAN12
71	LI:816379.6:2001JAN12	148	LI:816379.6.orf2:2001JAN12
72	LI:2123452.4:2001JAN12	149	LI:2123452.4.orf3:2001JAN12
73	LI:474559.8:2001JAN12	150	LI:474559.8.orf3:2001JAN12
74	LI:1089871.1:2001JAN12	151	LI:1089871.1.orf3:2001JAN12
75	LI:289608.1:2001JAN12	152	LI:289608.1.orf3:2001JAN12

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
1	LI:418914.1:2001JAN12	1	120	forward 1	TM	Cytosolic
1	LI:418914.1:2001JAN12	121	143	forward 1	TM	Transmembrane
1	LI:418914.1:2001JAN12	144	482	forward 1	TM	Non-cytosolic
1	LI:418914.1:2001JAN12	483	505	forward 1	TM	Transmembrane
1	LI:418914.1:2001JAN12	506	508	forward 1	TM	Cytosolic
1	LI:418914.1:2001JAN12	1	115	forward 3	TM	Cytosolic
1	LI:418914.1:2001JAN12	116	138	forward 3	TM	Transmembrane
1	LI:418914.1:2001JAN12	139	142	forward 3	TM	Non-cytosolic
1	LI:418914.1:2001JAN12	143	165	forward 3	TM	Transmembrane
1	LI:418914.1:2001JAN12	166	322	forward 3	TM	Cytosolic
1	LI:418914.1:2001JAN12	323	345	forward 3	TM	Transmembrane
1	LI:418914.1:2001JAN12	346	359	forward 3	TM	Non-cytosolic
1	LI:418914.1:2001JAN12	360	382	forward 3	TM	Transmembrane
1	LI:418914.1:2001JAN12	383	388	forward 3	TM	Cytosolic
1	LI:418914.1:2001JAN12	389	406	forward 3	TM	Transmembrane
1	LI:418914.1:2001JAN12	407	420	forward 3	TM	Non-cytosolic
1	LI:418914.1:2001JAN12	421	443	forward 3	TM	Transmembrane
1	LI:418914.1:2001JAN12	444	507	forward 3	TM	Cytosolic
2	LI:246108.7:2001JAN12	1	41	forward 1	TM	Cytosolic
2	LI:246108.7:2001JAN12	42	59	forward 1	TM	Transmembrane
2	LI:246108.7:2001JAN12	60	109	forward 1	TM	Non-cytosolic
2	LI:246108.7:2001JAN12	110	132	forward 1	TM	Transmembrane
2	LI:246108.7:2001JAN12	133	143	forward 1	TM	Cytosolic
2	LI:246108.7:2001JAN12	144	166	forward 1	TM	Transmembrane
2	LI:246108.7:2001JAN12	167	175	forward 1	TM	Non-cytosolic
2	LI:246108.7:2001JAN12	176	198	forward 1	TM	Transmembrane
2	LI:246108.7:2001JAN12	199	210	forward 1	TM	Cytosolic
2	LI:246108.7:2001JAN12	211	233	forward 1	TM	Transmembrane
2	LI:246108.7:2001JAN12	234	249	forward 1	TM	Non-cytosolic
2	LI:246108.7:2001JAN12	1	19	forward 2	TM	Cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
2	LI:246108.7:2001JAN12	20	42	forward 2	TM	Transmembrane
2	LI:246108.7:2001JAN12	43	56	forward 2	TM	Non-cytosolic
2	LI:246108.7:2001JAN12	57	74	forward 2	TM	Transmembrane
2	LI:246108.7:2001JAN12	75	86	forward 2	TM	Cytosolic
2	LI:246108.7:2001JAN12	87	104	forward 2	TM	Transmembrane
2	LI:246108.7:2001JAN12	105	113	forward 2	TM	Non-cytosolic
2	LI:246108.7:2001JAN12	114	136	forward 2	TM	Transmembrane
2	LI:246108.7:2001JAN12	137	142	forward 2	TM	Cytosolic
2	LI:246108.7:2001JAN12	143	165	forward 2	TM	Transmembrane
2	LI:246108.7:2001JAN12	166	184	forward 2	TM	Non-cytosolic
2	LI:246108.7:2001JAN12	185	207	forward 2	TM	Transmembrane
2	LI:246108.7:2001JAN12	208	249	forward 2	TM	Cytosolic
2	LI:246108.7:2001JAN12	1	79	forward 3	TM	Cytosolic
2	LI:246108.7:2001JAN12	80	102	forward 3	TM	Transmembrane
2	LI:246108.7:2001JAN12	103	111	forward 3	TM	Non-cytosolic
2	LI:246108.7:2001JAN12	112	131	forward 3	TM	Transmembrane
2	LI:246108.7:2001JAN12	132	135	forward 3	TM	Cytosolic
2	LI:246108.7:2001JAN12	136	158	forward 3	TM	Transmembrane
2	LI:246108.7:2001JAN12	159	248	forward 3	TM	Non-cytosolic
3	LI:204262.2:2001JAN12	1	144	forward 1	TM	Cytosolic
3	LI:204262.2:2001JAN12	145	167	forward 1	TM	Transmembrane
3	LI:204262.2:2001JAN12	168	220	forward 1	TM	Non-cytosolic
3	LI:204262.2:2001JAN12	221	243	forward 1	TM	Transmembrane
3	LI:204262.2:2001JAN12	244	374	forward 1	TM	Cytosolic
3	LI:204262.2:2001JAN12	1	154	forward 2	TM	Cytosolic
3	LI:204262.2:2001JAN12	155	177	forward 2	TM	Transmembrane
3	LI:204262.2:2001JAN12	178	207	forward 2	TM	Non-cytosolic
3	LI:204262.2:2001JAN12	208	230	forward 2	TM	Transmembrane
3	LI:204262.2:2001JAN12	231	241	forward 2	TM	Cytosolic
3	LI:204262.2:2001JAN12	242	264	forward 2	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
3	LI:204262.2:2001JAN12	265	312	forward 2	TM	Non-cytosolic
3	LI:204262.2:2001JAN12	313	332	forward 2	TM	Transmembrane
3	LI:204262.2:2001JAN12	333	374	forward 2	TM	Cytosolic
4	LI:331661.1:2001JAN12	1	554	forward 1	TM	Non-cytosolic
4	LI:331661.1:2001JAN12	555	577	forward 1	TM	Transmembrane
4	LI:331661.1:2001JAN12	578	589	forward 1	TM	Cytosolic
5	LI:335074.1:2001JAN12	1	221	forward 1	TM	Cytosolic
6	LI:154608.1:2001JAN12	1	40	forward 2	TM	Cytosolic
6	LI:154608.1:2001JAN12	41	63	forward 2	TM	Transmembrane
6	LI:154608.1:2001JAN12	64	196	forward 2	TM	Non-cytosolic
6	LI:154608.1:2001JAN12	197	219	forward 2	TM	Transmembrane
6	LI:154608.1:2001JAN12	220	252	forward 2	TM	Cytosolic
7	LI:462889.1:2001JAN12	1	155	forward 3	TM	Cytosolic
7	LI:462889.1:2001JAN12	156	178	forward 3	TM	Transmembrane
7	LI:462889.1:2001JAN12	179	239	forward 3	TM	Non-cytosolic
8	LI:236680.2:2001JAN12	1	4	forward 1	TM	Non-cytosolic
8	LI:236680.2:2001JAN12	5	27	forward 1	TM	Transmembrane
8	LI:236680.2:2001JAN12	28	47	forward 1	TM	Cytosolic
8	LI:236680.2:2001JAN12	48	67	forward 1	TM	Transmembrane
8	LI:236680.2:2001JAN12	68	777	forward 1	TM	Non-cytosolic
8	LI:236680.2:2001JAN12	1	48	forward 2	TM	Non-cytosolic
8	LI:236680.2:2001JAN12	49	71	forward 2	TM	Transmembrane
8	LI:236680.2:2001JAN12	72	83	forward 2	TM	Cytosolic
8	LI:236680.2:2001JAN12	84	106	forward 2	TM	Transmembrane
8	LI:236680.2:2001JAN12	107	777	forward 2	TM	Non-cytosolic
8	LI:236680.2:2001JAN12	1	19	forward 3	TM	Cytosolic
8	LI:236680.2:2001JAN12	20	42	forward 3	TM	Transmembrane
8	LI:236680.2:2001JAN12	43	777	forward 3	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	1	14	forward 1	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	15	37	forward 1	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
9	LI:228186.1:2001JAN12	38	84	forward 1	TM	Cytosolic
9	LI:228186.1:2001JAN12	85	107	forward 1	TM	Transmembrane
9	LI:228186.1:2001JAN12	108	1670	forward 1	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	1	19	forward 2	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	20	39	forward 2	TM	Transmembrane
9	LI:228186.1:2001JAN12	40	51	forward 2	TM	Cytosolic
9	LI:228186.1:2001JAN12	52	74	forward 2	TM	Transmembrane
9	LI:228186.1:2001JAN12	75	387	forward 2	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	388	410	forward 2	TM	Transmembrane
9	LI:228186.1:2001JAN12	411	447	forward 2	TM	Cytosolic
9	LI:228186.1:2001JAN12	448	467	forward 2	TM	Transmembrane
9	LI:228186.1:2001JAN12	468	476	forward 2	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	477	499	forward 2	TM	Transmembrane
9	LI:228186.1:2001JAN12	500	511	forward 2	TM	Cytosolic
9	LI:228186.1:2001JAN12	512	534	forward 2	TM	Transmembrane
9	LI:228186.1:2001JAN12	535	1231	forward 2	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	1232	1254	forward 2	TM	Transmembrane
9	LI:228186.1:2001JAN12	1255	1392	forward 2	TM	Cytosolic
9	LI:228186.1:2001JAN12	1393	1415	forward 2	TM	Transmembrane
9	LI:228186.1:2001JAN12	1416	1670	forward 2	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	1	21	forward 3	TM	Cytosolic
9	LI:228186.1:2001JAN12	22	41	forward 3	TM	Transmembrane
9	LI:228186.1:2001JAN12	42	55	forward 3	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	56	78	forward 3	TM	Transmembrane
9	LI:228186.1:2001JAN12	79	84	forward 3	TM	Cytosolic
9	LI:228186.1:2001JAN12	85	107	forward 3	TM	Transmembrane
9	LI:228186.1:2001JAN12	108	1181	forward 3	TM	Non-cytosolic
9	LI:228186.1:2001JAN12	1182	1204	forward 3	TM	Transmembrane
9	LI:228186.1:2001JAN12	1205	1260	forward 3	TM	Cytosolic
9	LI:228186.1:2001JAN12	1261	1283	forward 3	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
9	LI:228186.1:2001JAN12	1284	1670	forward 3	TM	Non-cytosolic
10	LI:721233.1:2001JAN12	1	175	forward 2	TM	Cytosolic
10	LI:721233.1:2001JAN12	176	198	forward 2	TM	Transmembrane
10	LI:721233.1:2001JAN12	199	217	forward 2	TM	Non-cytosolic
11	LI:291759.2:2001JAN12	1	116	forward 1	TM	Cytosolic
11	LI:291759.2:2001JAN12	117	139	forward 1	TM	Transmembrane
11	LI:291759.2:2001JAN12	140	423	forward 1	TM	Non-cytosolic
11	LI:291759.2:2001JAN12	1	192	forward 2	TM	Cytosolic
11	LI:291759.2:2001JAN12	193	215	forward 2	TM	Transmembrane
11	LI:291759.2:2001JAN12	216	423	forward 2	TM	Non-cytosolic
12	LI:292613.17:2001JAN12	1	14	forward 1	TM	Non-cytosolic
12	LI:292613.17:2001JAN12	15	33	forward 1	TM	Transmembrane
12	LI:292613.17:2001JAN12	34	121	forward 1	TM	Cytosolic
12	LI:292613.17:2001JAN12	1	56	forward 2	TM	Cytosolic
12	LI:292613.17:2001JAN12	57	79	forward 2	TM	Transmembrane
12	LI:292613.17:2001JAN12	80	120	forward 2	TM	Non-cytosolic
12	LI:292613.17:2001JAN12	1	120	forward 3	TM	Cytosolic
13	LI:412959.15:2001JAN12	1	52	forward 1	TM	Non-cytosolic
13	LI:412959.15:2001JAN12	53	75	forward 1	TM	Transmembrane
13	LI:412959.15:2001JAN12	76	95	forward 1	TM	Cytosolic
13	LI:412959.15:2001JAN12	96	118	forward 1	TM	Transmembrane
13	LI:412959.15:2001JAN12	119	137	forward 1	TM	Non-cytosolic
13	LI:412959.15:2001JAN12	138	160	forward 1	TM	Transmembrane
13	LI:412959.15:2001JAN12	161	164	forward 1	TM	Cytosolic
13	LI:412959.15:2001JAN12	165	183	forward 1	TM	Transmembrane
13	LI:412959.15:2001JAN12	184	187	forward 1	TM	Non-cytosolic
13	LI:412959.15:2001JAN12	1	33	forward 2	TM	Non-cytosolic
13	LI:412959.15:2001JAN12	34	56	forward 2	TM	Transmembrane
13	LI:412959.15:2001JAN12	57	95	forward 2	TM	Cytosolic
13	LI:412959.15:2001JAN12	96	118	forward 2	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
13	LI:412959.15:2001JAN12	119	127	forward 2	TM	Non-cytosolic
13	LI:412959.15:2001JAN12	128	145	forward 2	TM	Transmembrane
13	LI:412959.15:2001JAN12	146	149	forward 2	TM	Cytosolic
13	LI:412959.15:2001JAN12	150	169	forward 2	TM	Transmembrane
13	LI:412959.15:2001JAN12	170	187	forward 2	TM	Non-cytosolic
13	LI:412959.15:2001JAN12	1	125	forward 3	TM	Cytosolic
13	LI:412959.15:2001JAN12	126	148	forward 3	TM	Transmembrane
13	LI:412959.15:2001JAN12	149	187	forward 3	TM	Non-cytosolic
14	LI:482512.3:2001JAN12	1	767	forward 2	TM	Non-cytosolic
14	LI:482512.3:2001JAN12	768	790	forward 2	TM	Transmembrane
14	LI:482512.3:2001JAN12	791	806	forward 2	TM	Cytosolic
15	LI:413231.6:2001JAN12	1	231	forward 1	TM	Non-cytosolic
15	LI:413231.6:2001JAN12	232	254	forward 1	TM	Transmembrane
15	LI:413231.6:2001JAN12	255	274	forward 1	TM	Cytosolic
15	LI:413231.6:2001JAN12	275	297	forward 1	TM	Transmembrane
15	LI:413231.6:2001JAN12	298	332	forward 1	TM	Non-cytosolic
16	LI:203383.1:2001JAN12	1	12	forward 1	TM	Cytosolic
16	LI:203383.1:2001JAN12	13	32	forward 1	TM	Transmembrane
16	LI:203383.1:2001JAN12	33	414	forward 1	TM	Non-cytosolic
16	LI:203383.1:2001JAN12	1	12	forward 2	TM	Cytosolic
16	LI:203383.1:2001JAN12	13	35	forward 2	TM	Transmembrane
16	LI:203383.1:2001JAN12	36	413	forward 2	TM	Non-cytosolic
16	LI:203383.1:2001JAN12	1	12	forward 3	TM	Cytosolic
16	LI:203383.1:2001JAN12	13	35	forward 3	TM	Transmembrane
16	LI:203383.1:2001JAN12	36	413	forward 3	TM	Non-cytosolic
17	LI:133186.4:2001JAN12	1	25	forward 1	TM	Non-cytosolic
17	LI:133186.4:2001JAN12	26	48	forward 1	TM	Transmembrane
17	LI:133186.4:2001JAN12	49	52	forward 1	TM	Cytosolic
17	LI:133186.4:2001JAN12	53	75	forward 1	TM	Transmembrane
17	LI:133186.4:2001JAN12	76	89	forward 1	TM	Non-cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
17	LI:133186.4:2001JAN12	90	107	forward 1	TM	Transmembrane
17	LI:133186.4:2001JAN12	108	119	forward 1	TM	Cytosolic
17	LI:133186.4:2001JAN12	120	142	forward 1	TM	Transmembrane
17	LI:133186.4:2001JAN12	143	192	forward 1	TM	Non-cytosolic
17	LI:133186.4:2001JAN12	1	20	forward 2	TM	Cytosolic
17	LI:133186.4:2001JAN12	21	43	forward 2	TM	Transmembrane
17	LI:133186.4:2001JAN12	44	192	forward 2	TM	Non-cytosolic
17	LI:133186.4:2001JAN12	1	61	forward 3	TM	Non-cytosolic
17	LI:133186.4:2001JAN12	62	84	forward 3	TM	Transmembrane
17	LI:133186.4:2001JAN12	85	191	forward 3	TM	Cytosolic
18	LI:238576.2:2001JAN12	1	257	forward 1	TM	Non-cytosolic
18	LI:238576.2:2001JAN12	258	280	forward 1	TM	Transmembrane
18	LI:238576.2:2001JAN12	281	449	forward 1	TM	Cytosolic
19	LI:903914.3:2001JAN12	1	607	forward 1	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	608	630	forward 1	TM	Transmembrane
19	LI:903914.3:2001JAN12	631	917	forward 1	TM	Cytosolic
19	LI:903914.3:2001JAN12	918	940	forward 1	TM	Transmembrane
19	LI:903914.3:2001JAN12	941	1420	forward 1	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	1421	1443	forward 1	TM	Transmembrane
19	LI:903914.3:2001JAN12	1444	1596	forward 1	TM	Cytosolic
19	LI:903914.3:2001JAN12	1597	1619	forward 1	TM	Transmembrane
19	LI:903914.3:2001JAN12	1620	1628	forward 1	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	1629	1651	forward 1	TM	Transmembrane
19	LI:903914.3:2001JAN12	1652	1657	forward 1	TM	Cytosolic
19	LI:903914.3:2001JAN12	1658	1680	forward 1	TM	Transmembrane
19	LI:903914.3:2001JAN12	1681	2477	forward 1	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	1	313	forward 2	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	314	336	forward 2	TM	Transmembrane
19	LI:903914.3:2001JAN12	337	342	forward 2	TM	Cytosolic
19	LI:903914.3:2001JAN12	343	362	forward 2	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
19	LI:903914.3:2001JAN12	363	366	forward 2	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	367	389	forward 2	TM	Transmembrane
19	LI:903914.3:2001JAN12	390	409	forward 2	TM	Cytosolic
19	LI:903914.3:2001JAN12	410	432	forward 2	TM	Transmembrane
19	LI:903914.3:2001JAN12	433	446	forward 2	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	447	466	forward 2	TM	Transmembrane
19	LI:903914.3:2001JAN12	467	579	forward 2	TM	Cytosolic
19	LI:903914.3:2001JAN12	580	598	forward 2	TM	Transmembrane
19	LI:903914.3:2001JAN12	599	607	forward 2	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	608	630	forward 2	TM	Transmembrane
19	LI:903914.3:2001JAN12	631	678	forward 2	TM	Cytosolic
19	LI:903914.3:2001JAN12	679	701	forward 2	TM	Transmembrane
19	LI:903914.3:2001JAN12	702	845	forward 2	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	846	868	forward 2	TM	Transmembrane
19	LI:903914.3:2001JAN12	869	1071	forward 2	TM	Cytosolic
19	LI:903914.3:2001JAN12	1072	1094	forward 2	TM	Transmembrane
19	LI:903914.3:2001JAN12	1095	2476	forward 2	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	1	1157	forward 3	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	1158	1177	forward 3	TM	Transmembrane
19	LI:903914.3:2001JAN12	1178	1419	forward 3	TM	Cytosolic
19	LI:903914.3:2001JAN12	1420	1442	forward 3	TM	Transmembrane
19	LI:903914.3:2001JAN12	1443	1456	forward 3	TM	Non-cytosolic
19	LI:903914.3:2001JAN12	1457	1479	forward 3	TM	Transmembrane
19	LI:903914.3:2001JAN12	1480	1499	forward 3	TM	Cytosolic
19	LI:903914.3:2001JAN12	1500	1522	forward 3	TM	Transmembrane
19	LI:903914.3:2001JAN12	1523	2476	forward 3	TM	Non-cytosolic
20	LI:150817.1:2001JAN12	1	6	forward 1	TM	Cytosolic
20	LI:150817.1:2001JAN12	7	29	forward 1	TM	Transmembrane
20	LI:150817.1:2001JAN12	30	38	forward 1	TM	Non-cytosolic
20	LI:150817.1:2001JAN12	39	61	forward 1	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
20	LI:150817.1:2001JAN12	62	81	forward 1	TM	Cytosolic
20	LI:150817.1:2001JAN12	82	104	forward 1	TM	Transmembrane
20	LI:150817.1:2001JAN12	105	1471	forward 1	TM	Non-cytosolic
20	LI:150817.1:2001JAN12	1	37	forward 3	TM	Cytosolic
20	LI:150817.1:2001JAN12	38	60	forward 3	TM	Transmembrane
20	LI:150817.1:2001JAN12	61	87	forward 3	TM	Non-cytosolic
20	LI:150817.1:2001JAN12	88	110	forward 3	TM	Transmembrane
20	LI:150817.1:2001JAN12	111	336	forward 3	TM	Cytosolic
20	LI:150817.1:2001JAN12	337	359	forward 3	TM	Transmembrane
20	LI:150817.1:2001JAN12	360	798	forward 3	TM	Non-cytosolic
20	LI:150817.1:2001JAN12	799	821	forward 3	TM	Transmembrane
20	LI:150817.1:2001JAN12	822	1024	forward 3	TM	Cytosolic
20	LI:150817.1:2001JAN12	1025	1047	forward 3	TM	Transmembrane
20	LI:150817.1:2001JAN12	1048	1471	forward 3	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	1	19	forward 1	TM	Cytosolic
21	LI:219627.1:2001JAN12	20	42	forward 1	TM	Transmembrane
21	LI:219627.1:2001JAN12	43	117	forward 1	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	118	140	forward 1	TM	Transmembrane
21	LI:219627.1:2001JAN12	141	399	forward 1	TM	Cytosolic
21	LI:219627.1:2001JAN12	400	419	forward 1	TM	Transmembrane
21	LI:219627.1:2001JAN12	420	428	forward 1	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	429	451	forward 1	TM	Transmembrane
21	LI:219627.1:2001JAN12	452	520	forward 1	TM	Cytosolic
21	LI:219627.1:2001JAN12	521	543	forward 1	TM	Transmembrane
21	LI:219627.1:2001JAN12	544	719	forward 1	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	1	523	forward 2	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	524	546	forward 2	TM	Transmembrane
21	LI:219627.1:2001JAN12	547	676	forward 2	TM	Cytosolic
21	LI:219627.1:2001JAN12	677	699	forward 2	TM	Transmembrane
21	LI:219627.1:2001JAN12	700	719	forward 2	TM	Non-cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
21	LI:219627.1:2001JAN12	1	3	forward 3	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	4	20	forward 3	TM	Transmembrane
21	LI:219627.1:2001JAN12	21	26	forward 3	TM	Cytosolic
21	LI:219627.1:2001JAN12	27	49	forward 3	TM	Transmembrane
21	LI:219627.1:2001JAN12	50	116	forward 3	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	117	139	forward 3	TM	Transmembrane
21	LI:219627.1:2001JAN12	140	223	forward 3	TM	Cytosolic
21	LI:219627.1:2001JAN12	224	246	forward 3	TM	Transmembrane
21	LI:219627.1:2001JAN12	247	255	forward 3	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	256	278	forward 3	TM	Transmembrane
21	LI:219627.1:2001JAN12	279	509	forward 3	TM	Cytosolic
21	LI:219627.1:2001JAN12	510	532	forward 3	TM	Transmembrane
21	LI:219627.1:2001JAN12	533	535	forward 3	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	536	558	forward 3	TM	Transmembrane
21	LI:219627.1:2001JAN12	559	665	forward 3	TM	Cytosolic
21	LI:219627.1:2001JAN12	666	688	forward 3	TM	Transmembrane
21	LI:219627.1:2001JAN12	689	692	forward 3	TM	Non-cytosolic
21	LI:219627.1:2001JAN12	693	715	forward 3	TM	Transmembrane
21	LI:219627.1:2001JAN12	716	718	forward 3	TM	Cytosolic
22	LI:197812.4:2001JAN12	1	14	forward 1	TM	Non-cytosolic
22	LI:197812.4:2001JAN12	15	34	forward 1	TM	Transmembrane
22	LI:197812.4:2001JAN12	35	107	forward 1	TM	Cytosolic
22	LI:197812.4:2001JAN12	1	53	forward 2	TM	Non-cytosolic
22	LI:197812.4:2001JAN12	54	76	forward 2	TM	Transmembrane
22	LI:197812.4:2001JAN12	77	106	forward 2	TM	Cytosolic
22	LI:197812.4:2001JAN12	1	52	forward 3	TM	Cytosolic
22	LI:197812.4:2001JAN12	53	75	forward 3	TM	Transmembrane
22	LI:197812.4:2001JAN12	76	106	forward 3	TM	Non-cytosolic
23	LI:101525.1:2001JAN12	1	209	forward 2	TM	Cytosolic
23	LI:101525.1:2001JAN12	210	232	forward 2	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
23	LI:101525.1:2001JAN12	233	257	forward 2	TM	Non-cytosolic
23	LI:101525.1:2001JAN12	258	280	forward 2	TM	Transmembrane
23	LI:101525.1:2001JAN12	281	300	forward 2	TM	Cytosolic
23	LI:101525.1:2001JAN12	301	318	forward 2	TM	Transmembrane
23	LI:101525.1:2001JAN12	319	327	forward 2	TM	Non-cytosolic
23	LI:101525.1:2001JAN12	328	350	forward 2	TM	Transmembrane
23	LI:101525.1:2001JAN12	351	361	forward 2	TM	Cytosolic
23	LI:101525.1:2001JAN12	362	379	forward 2	TM	Transmembrane
23	LI:101525.1:2001JAN12	380	770	forward 2	TM	Non-cytosolic
23	LI:101525.1:2001JAN12	1	209	forward 3	TM	Cytosolic
23	LI:101525.1:2001JAN12	210	232	forward 3	TM	Transmembrane
23	LI:101525.1:2001JAN12	233	769	forward 3	TM	Non-cytosolic
24	LI:891123.1:2001JAN12	1	92	forward 1	TM	Cytosolic
24	LI:891123.1:2001JAN12	93	115	forward 1	TM	Transmembrane
24	LI:891123.1:2001JAN12	116	124	forward 1	TM	Non-cytosolic
24	LI:891123.1:2001JAN12	125	147	forward 1	TM	Transmembrane
24	LI:891123.1:2001JAN12	148	326	forward 1	TM	Cytosolic
25	LI:813500.1:2001JAN12	1	388	forward 1	TM	Non-cytosolic
25	LI:813500.1:2001JAN12	389	411	forward 1	TM	Transmembrane
25	LI:813500.1:2001JAN12	412	691	forward 1	TM	Cytosolic
25	LI:813500.1:2001JAN12	1	157	forward 3	TM	Non-cytosolic
25	LI:813500.1:2001JAN12	158	180	forward 3	TM	Transmembrane
25	LI:813500.1:2001JAN12	181	184	forward 3	TM	Cytosolic
25	LI:813500.1:2001JAN12	185	207	forward 3	TM	Transmembrane
25	LI:813500.1:2001JAN12	208	221	forward 3	TM	Non-cytosolic
25	LI:813500.1:2001JAN12	222	244	forward 3	TM	Transmembrane
25	LI:813500.1:2001JAN12	245	537	forward 3	TM	Cytosolic
25	LI:813500.1:2001JAN12	538	560	forward 3	TM	Transmembrane
25	LI:813500.1:2001JAN12	561	691	forward 3	TM	Non-cytosolic
26	LI:1037251.1:2001JAN12	1	59	forward 1	TM	Non-cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
26	LI:1037251.1:2001JAN12	60	82	forward 1	TM	Transmembrane
26	LI:1037251.1:2001JAN12	83	221	forward 1	TM	Cytosolic
26	LI:1037251.1:2001JAN12	222	244	forward 1	TM	Transmembrane
26	LI:1037251.1:2001JAN12	245	263	forward 1	TM	Non-cytosolic
26	LI:1037251.1:2001JAN12	264	286	forward 1	TM	Transmembrane
26	LI:1037251.1:2001JAN12	287	428	forward 1	TM	Cytosolic
26	LI:1037251.1:2001JAN12	429	451	forward 1	TM	Transmembrane
26	LI:1037251.1:2001JAN12	452	614	forward 1	TM	Non-cytosolic
26	LI:1037251.1:2001JAN12	615	637	forward 1	TM	Transmembrane
26	LI:1037251.1:2001JAN12	638	653	forward 1	TM	Cytosolic
26	LI:1037251.1:2001JAN12	1	171	forward 2	TM	Cytosolic
26	LI:1037251.1:2001JAN12	172	191	forward 2	TM	Transmembrane
26	LI:1037251.1:2001JAN12	192	200	forward 2	TM	Non-cytosolic
26	LI:1037251.1:2001JAN12	201	223	forward 2	TM	Transmembrane
26	LI:1037251.1:2001JAN12	224	267	forward 2	TM	Cytosolic
26	LI:1037251.1:2001JAN12	268	290	forward 2	TM	Transmembrane
26	LI:1037251.1:2001JAN12	291	425	forward 2	TM	Non-cytosolic
26	LI:1037251.1:2001JAN12	426	445	forward 2	TM	Transmembrane
26	LI:1037251.1:2001JAN12	446	564	forward 2	TM	Cytosolic
26	LI:1037251.1:2001JAN12	565	584	forward 2	TM	Transmembrane
26	LI:1037251.1:2001JAN12	585	612	forward 2	TM	Non-cytosolic
26	LI:1037251.1:2001JAN12	613	635	forward 2	TM	Transmembrane
26	LI:1037251.1:2001JAN12	636	652	forward 2	TM	Cytosolic
26	LI:1037251.1:2001JAN12	1	98	forward 3	TM	Cytosolic
26	LI:1037251.1:2001JAN12	99	121	forward 3	TM	Transmembrane
26	LI:1037251.1:2001JAN12	122	262	forward 3	TM	Non-cytosolic
26	LI:1037251.1:2001JAN12	263	285	forward 3	TM	Transmembrane
26	LI:1037251.1:2001JAN12	286	428	forward 3	TM	Cytosolic
26	LI:1037251.1:2001JAN12	429	451	forward 3	TM	Transmembrane
26	LI:1037251.1:2001JAN12	452	652	forward 3	TM	Non-cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
27	LI:2032187.1:2001JAN12	1	14	forward 3	TM	Non-cytosolic
27	LI:2032187.1:2001JAN12	15	36	forward 3	TM	Transmembrane
27	LI:2032187.1:2001JAN12	37	37	forward 3	TM	Cytosolic
27	LI:2032187.1:2001JAN12	38	60	forward 3	TM	Transmembrane
27	LI:2032187.1:2001JAN12	61	480	forward 3	TM	Non-cytosolic
28	LI:347572.1:2001JAN12	1	963	forward 2	TM	Non-cytosolic
28	LI:347572.1:2001JAN12	964	986	forward 2	TM	Transmembrane
28	LI:347572.1:2001JAN12	987	1221	forward 2	TM	Cytosolic
28	LI:347572.1:2001JAN12	1	905	forward 3	TM	Non-cytosolic
28	LI:347572.1:2001JAN12	906	925	forward 3	TM	Transmembrane
28	LI:347572.1:2001JAN12	926	1221	forward 3	TM	Cytosolic
29	LI:007788.1:2001JAN12	1	346	forward 1	TM	Non-cytosolic
29	LI:007788.1:2001JAN12	347	366	forward 1	TM	Transmembrane
29	LI:007788.1:2001JAN12	367	698	forward 1	TM	Cytosolic
29	LI:007788.1:2001JAN12	1	344	forward 2	TM	Cytosolic
29	LI:007788.1:2001JAN12	345	367	forward 2	TM	Transmembrane
29	LI:007788.1:2001JAN12	368	697	forward 2	TM	Non-cytosolic
29	LI:007788.1:2001JAN12	1	342	forward 3	TM	Cytosolic
29	LI:007788.1:2001JAN12	343	365	forward 3	TM	Transmembrane
29	LI:007788.1:2001JAN12	366	697	forward 3	TM	Non-cytosolic
30	LI:336872.1:2001JAN12	1	406	forward 2	TM	Non-cytosolic
30	LI:336872.1:2001JAN12	407	429	forward 2	TM	Transmembrane
30	LI:336872.1:2001JAN12	430	580	forward 2	TM	Cytosolic
31	LI:1143291.1:2001JAN12	1	554	forward 1	TM	Non-cytosolic
31	LI:1143291.1:2001JAN12	555	577	forward 1	TM	Transmembrane
31	LI:1143291.1:2001JAN12	578	623	forward 1	TM	Cytosolic
31	LI:1143291.1:2001JAN12	624	643	forward 1	TM	Transmembrane
31	LI:1143291.1:2001JAN12	644	647	forward 1	TM	Non-cytosolic
32	LI:093477.1:2001JAN12	1	194	forward 1	TM	Non-cytosolic
32	LI:093477.1:2001JAN12	195	217	forward 1	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
32	LI:093477.1:2001JAN12	218	243	forward 1	TM	Cytosolic
32	LI:093477.1:2001JAN12	244	263	forward 1	TM	Transmembrane
32	LI:093477.1:2001JAN12	264	509	forward 1	TM	Non-cytosolic
33	LI:222105.1:2001JAN12	1	759	forward 1	TM	Non-cytosolic
33	LI:222105.1:2001JAN12	760	782	forward 1	TM	Transmembrane
33	LI:222105.1:2001JAN12	783	825	forward 1	TM	Cytosolic
33	LI:222105.1:2001JAN12	826	840	forward 1	TM	Transmembrane
33	LI:222105.1:2001JAN12	841	859	forward 1	TM	Non-cytosolic
33	LI:222105.1:2001JAN12	860	882	forward 1	TM	Transmembrane
33	LI:222105.1:2001JAN12	883	905	forward 1	TM	Cytosolic
33	LI:222105.1:2001JAN12	906	928	forward 1	TM	Transmembrane
33	LI:222105.1:2001JAN12	929	947	forward 1	TM	Non-cytosolic
33	LI:222105.1:2001JAN12	948	970	forward 1	TM	Transmembrane
33	LI:222105.1:2001JAN12	971	981	forward 1	TM	Cytosolic
33	LI:222105.1:2001JAN12	1	825	forward 2	TM	Non-cytosolic
33	LI:222105.1:2001JAN12	826	840	forward 2	TM	Transmembrane
33	LI:222105.1:2001JAN12	841	860	forward 2	TM	Cytosolic
33	LI:222105.1:2001JAN12	861	883	forward 2	TM	Transmembrane
33	LI:222105.1:2001JAN12	884	904	forward 2	TM	Non-cytosolic
33	LI:222105.1:2001JAN12	905	927	forward 2	TM	Transmembrane
33	LI:222105.1:2001JAN12	928	981	forward 2	TM	Cytosolic
34	LI:816737.2:2001JAN12	1	753	forward 1	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	754	776	forward 1	TM	Transmembrane
34	LI:816737.2:2001JAN12	777	796	forward 1	TM	Cytosolic
34	LI:816737.2:2001JAN12	797	819	forward 1	TM	Transmembrane
34	LI:816737.2:2001JAN12	820	906	forward 1	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	907	929	forward 1	TM	Transmembrane
34	LI:816737.2:2001JAN12	930	941	forward 1	TM	Cytosolic
34	LI:816737.2:2001JAN12	942	964	forward 1	TM	Transmembrane
34	LI:816737.2:2001JAN12	965	1015	forward 1	TM	Non-cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
34	LI:816737.2:2001JAN12	1016	1038	forward 1	TM	Transmembrane
34	LI:816737.2:2001JAN12	1039	1067	forward 1	TM	Cytosolic
34	LI:816737.2:2001JAN12	1068	1090	forward 1	TM	Transmembrane
34	LI:816737.2:2001JAN12	1091	1125	forward 1	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	1126	1148	forward 1	TM	Transmembrane
34	LI:816737.2:2001JAN12	1149	1167	forward 1	TM	Cytosolic
34	LI:816737.2:2001JAN12	1168	1190	forward 1	TM	Transmembrane
34	LI:816737.2:2001JAN12	1191	1204	forward 1	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	1205	1227	forward 1	TM	Transmembrane
34	LI:816737.2:2001JAN12	1228	1341	forward 1	TM	Cytosolic
34	LI:816737.2:2001JAN12	1	901	forward 2	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	902	924	forward 2	TM	Transmembrane
34	LI:816737.2:2001JAN12	925	1026	forward 2	TM	Cytosolic
34	LI:816737.2:2001JAN12	1027	1046	forward 2	TM	Transmembrane
34	LI:816737.2:2001JAN12	1047	1079	forward 2	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	1080	1102	forward 2	TM	Transmembrane
34	LI:816737.2:2001JAN12	1103	1182	forward 2	TM	Cytosolic
34	LI:816737.2:2001JAN12	1183	1205	forward 2	TM	Transmembrane
34	LI:816737.2:2001JAN12	1206	1219	forward 2	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	1220	1242	forward 2	TM	Transmembrane
34	LI:816737.2:2001JAN12	1243	1341	forward 2	TM	Cytosolic
34	LI:816737.2:2001JAN12	1	302	forward 3	TM	Cytosolic
34	LI:816737.2:2001JAN12	303	325	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	326	364	forward 3	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	365	387	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	388	666	forward 3	TM	Cytosolic
34	LI:816737.2:2001JAN12	667	686	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	687	762	forward 3	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	763	785	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	786	899	forward 3	TM	Cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
34	LI:816737.2:2001JAN12	900	922	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	923	941	forward 3	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	942	960	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	961	966	forward 3	TM	Cytosolic
34	LI:816737.2:2001JAN12	967	989	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	990	1024	forward 3	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	1025	1044	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	1045	1188	forward 3	TM	Cytosolic
34	LI:816737.2:2001JAN12	1189	1211	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	1212	1245	forward 3	TM	Non-cytosolic
34	LI:816737.2:2001JAN12	1246	1268	forward 3	TM	Transmembrane
34	LI:816737.2:2001JAN12	1269	1340	forward 3	TM	Cytosolic
35	LI:475524.1:2001JAN12	1	339	forward 3	TM	Non-cytosolic
35	LI:475524.1:2001JAN12	340	362	forward 3	TM	Transmembrane
35	LI:475524.1:2001JAN12	363	557	forward 3	TM	Cytosolic
36	LI:383639.1:2001JAN12	1	172	forward 3	TM	Cytosolic
36	LI:383639.1:2001JAN12	173	192	forward 3	TM	Transmembrane
36	LI:383639.1:2001JAN12	193	206	forward 3	TM	Non-cytosolic
36	LI:383639.1:2001JAN12	207	229	forward 3	TM	Transmembrane
36	LI:383639.1:2001JAN12	230	240	forward 3	TM	Cytosolic
36	LI:383639.1:2001JAN12	241	263	forward 3	TM	Transmembrane
36	LI:383639.1:2001JAN12	264	466	forward 3	TM	Non-cytosolic
36	LI:383639.1:2001JAN12	467	489	forward 3	TM	Transmembrane
36	LI:383639.1:2001JAN12	490	500	forward 3	TM	Cytosolic
36	LI:383639.1:2001JAN12	501	523	forward 3	TM	Transmembrane
36	LI:383639.1:2001JAN12	524	971	forward 3	TM	Non-cytosolic
37	LI:814346.1:2001JAN12	1	314	forward 2	TM	Non-cytosolic
37	LI:814346.1:2001JAN12	315	337	forward 2	TM	Transmembrane
37	LI:814346.1:2001JAN12	338	348	forward 2	TM	Cytosolic
37	LI:814346.1:2001JAN12	349	371	forward 2	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
37	LI:814346.1:2001JAN12	372	457	forward 2	TM	Non-cytosolic
37	LI:814346.1:2001JAN12	458	477	forward 2	TM	Transmembrane
37	LI:814346.1:2001JAN12	478	483	forward 2	TM	Cytosolic
37	LI:814346.1:2001JAN12	484	506	forward 2	TM	Transmembrane
37	LI:814346.1:2001JAN12	507	608	forward 2	TM	Non-cytosolic
37	LI:814346.1:2001JAN12	609	631	forward 2	TM	Transmembrane
37	LI:814346.1:2001JAN12	632	767	forward 2	TM	Cytosolic
37	LI:814346.1:2001JAN12	768	790	forward 2	TM	Transmembrane
37	LI:814346.1:2001JAN12	791	818	forward 2	TM	Non-cytosolic
37	LI:814346.1:2001JAN12	819	841	forward 2	TM	Transmembrane
37	LI:814346.1:2001JAN12	842	853	forward 2	TM	Cytosolic
37	LI:814346.1:2001JAN12	854	876	forward 2	TM	Transmembrane
37	LI:814346.1:2001JAN12	877	924	forward 2	TM	Non-cytosolic
37	LI:814346.1:2001JAN12	1	341	forward 3	TM	Non-cytosolic
37	LI:814346.1:2001JAN12	342	364	forward 3	TM	Transmembrane
37	LI:814346.1:2001JAN12	365	370	forward 3	TM	Cytosolic
37	LI:814346.1:2001JAN12	371	393	forward 3	TM	Transmembrane
37	LI:814346.1:2001JAN12	394	483	forward 3	TM	Non-cytosolic
37	LI:814346.1:2001JAN12	484	506	forward 3	TM	Transmembrane
37	LI:814346.1:2001JAN12	507	526	forward 3	TM	Cytosolic
37	LI:814346.1:2001JAN12	527	549	forward 3	TM	Transmembrane
37	LI:814346.1:2001JAN12	550	923	forward 3	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	1	1117	forward 1	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	1118	1140	forward 1	TM	Transmembrane
38	LI:898195.6:2001JAN12	1141	1260	forward 1	TM	Cytosolic
38	LI:898195.6:2001JAN12	1261	1283	forward 1	TM	Transmembrane
38	LI:898195.6:2001JAN12	1284	1318	forward 1	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	1319	1338	forward 1	TM	Transmembrane
38	LI:898195.6:2001JAN12	1339	1384	forward 1	TM	Cytosolic
38	LI:898195.6:2001JAN12	1385	1404	forward 1	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
38	LI:898195.6:2001JAN12	1405	1418	forward 1	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	1419	1441	forward 1	TM	Transmembrane
38	LI:898195.6:2001JAN12	1442	1468	forward 1	TM	Cytosolic
38	LI:898195.6:2001JAN12	1	905	forward 2	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	906	928	forward 2	TM	Transmembrane
38	LI:898195.6:2001JAN12	929	969	forward 2	TM	Cytosolic
38	LI:898195.6:2001JAN12	970	992	forward 2	TM	Transmembrane
38	LI:898195.6:2001JAN12	993	1006	forward 2	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	1007	1029	forward 2	TM	Transmembrane
38	LI:898195.6:2001JAN12	1030	1118	forward 2	TM	Cytosolic
38	LI:898195.6:2001JAN12	1119	1141	forward 2	TM	Transmembrane
38	LI:898195.6:2001JAN12	1142	1263	forward 2	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	1264	1286	forward 2	TM	Transmembrane
38	LI:898195.6:2001JAN12	1287	1388	forward 2	TM	Cytosolic
38	LI:898195.6:2001JAN12	1389	1411	forward 2	TM	Transmembrane
38	LI:898195.6:2001JAN12	1412	1420	forward 2	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	1421	1443	forward 2	TM	Transmembrane
38	LI:898195.6:2001JAN12	1444	1468	forward 2	TM	Cytosolic
38	LI:898195.6:2001JAN12	1	974	forward 3	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	975	997	forward 3	TM	Transmembrane
38	LI:898195.6:2001JAN12	998	1120	forward 3	TM	Cytosolic
38	LI:898195.6:2001JAN12	1121	1143	forward 3	TM	Transmembrane
38	LI:898195.6:2001JAN12	1144	1152	forward 3	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	1153	1175	forward 3	TM	Transmembrane
38	LI:898195.6:2001JAN12	1176	1264	forward 3	TM	Cytosolic
38	LI:898195.6:2001JAN12	1265	1284	forward 3	TM	Transmembrane
38	LI:898195.6:2001JAN12	1285	1387	forward 3	TM	Non-cytosolic
38	LI:898195.6:2001JAN12	1388	1410	forward 3	TM	Transmembrane
38	LI:898195.6:2001JAN12	1411	1416	forward 3	TM	Cytosolic
38	LI:898195.6:2001JAN12	1417	1439	forward 3	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
38	LI:898195.6:2001JAN12	1440	1467	forward 3	TM	Non-cytosolic
39	LI:210497.2:2001JAN12	1	138	forward 3	TM	Cytosolic
40	LI:110297.4:2001JAN12	1	63	forward 1	TM	Cytosolic
40	LI:110297.4:2001JAN12	64	86	forward 1	TM	Transmembrane
40	LI:110297.4:2001JAN12	87	706	forward 1	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	707	724	forward 1	TM	Transmembrane
40	LI:110297.4:2001JAN12	725	760	forward 1	TM	Cytosolic
40	LI:110297.4:2001JAN12	761	783	forward 1	TM	Transmembrane
40	LI:110297.4:2001JAN12	784	792	forward 1	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	793	815	forward 1	TM	Transmembrane
40	LI:110297.4:2001JAN12	816	825	forward 1	TM	Cytosolic
40	LI:110297.4:2001JAN12	1	129	forward 2	TM	Cytosolic
40	LI:110297.4:2001JAN12	130	147	forward 2	TM	Transmembrane
40	LI:110297.4:2001JAN12	148	156	forward 2	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	157	179	forward 2	TM	Transmembrane
40	LI:110297.4:2001JAN12	180	601	forward 2	TM	Cytosolic
40	LI:110297.4:2001JAN12	602	621	forward 2	TM	Transmembrane
40	LI:110297.4:2001JAN12	622	625	forward 2	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	626	648	forward 2	TM	Transmembrane
40	LI:110297.4:2001JAN12	649	761	forward 2	TM	Cytosolic
40	LI:110297.4:2001JAN12	762	784	forward 2	TM	Transmembrane
40	LI:110297.4:2001JAN12	785	798	forward 2	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	799	821	forward 2	TM	Transmembrane
40	LI:110297.4:2001JAN12	822	825	forward 2	TM	Cytosolic
40	LI:110297.4:2001JAN12	1	11	forward 3	TM	Cytosolic
40	LI:110297.4:2001JAN12	12	29	forward 3	TM	Transmembrane
40	LI:110297.4:2001JAN12	30	62	forward 3	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	63	85	forward 3	TM	Transmembrane
40	LI:110297.4:2001JAN12	86	129	forward 3	TM	Cytosolic
40	LI:110297.4:2001JAN12	130	152	forward 3	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
40	LI:110297.4:2001JAN12	153	291	forward 3	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	292	314	forward 3	TM	Transmembrane
40	LI:110297.4:2001JAN12	315	326	forward 3	TM	Cytosolic
40	LI:110297.4:2001JAN12	327	349	forward 3	TM	Transmembrane
40	LI:110297.4:2001JAN12	350	363	forward 3	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	364	386	forward 3	TM	Transmembrane
40	LI:110297.4:2001JAN12	387	607	forward 3	TM	Cytosolic
40	LI:110297.4:2001JAN12	608	630	forward 3	TM	Transmembrane
40	LI:110297.4:2001JAN12	631	732	forward 3	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	733	752	forward 3	TM	Transmembrane
40	LI:110297.4:2001JAN12	753	758	forward 3	TM	Cytosolic
40	LI:110297.4:2001JAN12	759	781	forward 3	TM	Transmembrane
40	LI:110297.4:2001JAN12	782	790	forward 3	TM	Non-cytosolic
40	LI:110297.4:2001JAN12	791	813	forward 3	TM	Transmembrane
40	LI:110297.4:2001JAN12	814	824	forward 3	TM	Cytosolic
41	LI:2051312.1:2001JAN12	1	46	forward 1	TM	Cytosolic
41	LI:2051312.1:2001JAN12	47	69	forward 1	TM	Transmembrane
41	LI:2051312.1:2001JAN12	70	542	forward 1	TM	Non-cytosolic
41	LI:2051312.1:2001JAN12	1	36	forward 3	TM	Cytosolic
41	LI:2051312.1:2001JAN12	37	59	forward 3	TM	Transmembrane
41	LI:2051312.1:2001JAN12	60	541	forward 3	TM	Non-cytosolic
42	LI:350272.2:2001JAN12	1	487	forward 1	TM	Non-cytosolic
42	LI:350272.2:2001JAN12	488	510	forward 1	TM	Transmembrane
42	LI:350272.2:2001JAN12	511	519	forward 1	TM	Cytosolic
43	LI:1085472.4:2001JAN12	1	313	forward 1	TM	Cytosolic
43	LI:1085472.4:2001JAN12	314	336	forward 1	TM	Transmembrane
43	LI:1085472.4:2001JAN12	337	713	forward 1	TM	Non-cytosolic
43	LI:1085472.4:2001JAN12	714	736	forward 1	TM	Transmembrane
43	LI:1085472.4:2001JAN12	737	968	forward 1	TM	Cytosolic
43	LI:1085472.4:2001JAN12	969	991	forward 1	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
43	LI:1085472.4:2001JAN12	992	1199	forward 1	TM	Non-cytosolic
43	LI:1085472.4:2001JAN12	1	1123	forward 2	TM	Non-cytosolic
43	LI:1085472.4:2001JAN12	1124	1146	forward 2	TM	Transmembrane
43	LI:1085472.4:2001JAN12	1147	1166	forward 2	TM	Cytosolic
43	LI:1085472.4:2001JAN12	1167	1189	forward 2	TM	Transmembrane
43	LI:1085472.4:2001JAN12	1190	1198	forward 2	TM	Non-cytosolic
44	LI:1190272.1:2001JAN12	1	321	forward 1	TM	Non-cytosolic
44	LI:1190272.1:2001JAN12	322	344	forward 1	TM	Transmembrane
44	LI:1190272.1:2001JAN12	345	363	forward 1	TM	Cytosolic
44	LI:1190272.1:2001JAN12	1	311	forward 3	TM	Non-cytosolic
44	LI:1190272.1:2001JAN12	312	334	forward 3	TM	Transmembrane
44	LI:1190272.1:2001JAN12	335	362	forward 3	TM	Cytosolic
45	LI:1086797.1:2001JAN12	1	12	forward 1	TM	Cytosolic
45	LI:1086797.1:2001JAN12	13	35	forward 1	TM	Transmembrane
45	LI:1086797.1:2001JAN12	36	1202	forward 1	TM	Non-cytosolic
45	LI:1086797.1:2001JAN12	1	12	forward 2	TM	Cytosolic
45	LI:1086797.1:2001JAN12	13	35	forward 2	TM	Transmembrane
45	LI:1086797.1:2001JAN12	36	1202	forward 2	TM	Non-cytosolic
45	LI:1086797.1:2001JAN12	1	19	forward 3	TM	Non-cytosolic
45	LI:1086797.1:2001JAN12	20	42	forward 3	TM	Transmembrane
45	LI:1086797.1:2001JAN12	43	172	forward 3	TM	Cytosolic
45	LI:1086797.1:2001JAN12	173	195	forward 3	TM	Transmembrane
45	LI:1086797.1:2001JAN12	196	1013	forward 3	TM	Non-cytosolic
45	LI:1086797.1:2001JAN12	1014	1036	forward 3	TM	Transmembrane
45	LI:1086797.1:2001JAN12	1037	1202	forward 3	TM	Cytosolic
46	LI:1144466.1:2001JAN12	1	690	forward 1	TM	Non-cytosolic
46	LI:1144466.1:2001JAN12	691	710	forward 1	TM	Transmembrane
46	LI:1144466.1:2001JAN12	711	723	forward 1	TM	Cytosolic
46	LI:1144466.1:2001JAN12	1	690	forward 2	TM	Non-cytosolic
46	LI:1144466.1:2001JAN12	691	710	forward 2	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
46	LI:1144466.1:2001JAN12	711	723	forward 2	TM	Cytosolic
47	LI:1147914.1:2001JAN12	1	71	forward 2	TM	Cytosolic
47	LI:1147914.1:2001JAN12	72	94	forward 2	TM	Transmembrane
47	LI:1147914.1:2001JAN12	95	464	forward 2	TM	Non-cytosolic
48	LI:758086.1:2001JAN12	1	50	forward 1	TM	Non-cytosolic
48	LI:758086.1:2001JAN12	51	73	forward 1	TM	Transmembrane
48	LI:758086.1:2001JAN12	74	79	forward 1	TM	Cytosolic
48	LI:758086.1:2001JAN12	80	97	forward 1	TM	Transmembrane
48	LI:758086.1:2001JAN12	98	286	forward 1	TM	Non-cytosolic
48	LI:758086.1:2001JAN12	287	309	forward 1	TM	Transmembrane
48	LI:758086.1:2001JAN12	310	329	forward 1	TM	Cytosolic
48	LI:758086.1:2001JAN12	330	352	forward 1	TM	Transmembrane
48	LI:758086.1:2001JAN12	353	464	forward 1	TM	Non-cytosolic
48	LI:758086.1:2001JAN12	1	382	forward 3	TM	Non-cytosolic
48	LI:758086.1:2001JAN12	383	405	forward 3	TM	Transmembrane
48	LI:758086.1:2001JAN12	406	437	forward 3	TM	Cytosolic
48	LI:758086.1:2001JAN12	438	457	forward 3	TM	Transmembrane
48	LI:758086.1:2001JAN12	458	463	forward 3	TM	Non-cytosolic
49	LI:765245.5:2001JAN12	1	351	forward 1	TM	Non-cytosolic
49	LI:765245.5:2001JAN12	352	374	forward 1	TM	Transmembrane
49	LI:765245.5:2001JAN12	375	766	forward 1	TM	Cytosolic
49	LI:765245.5:2001JAN12	1	352	forward 3	TM	Non-cytosolic
49	LI:765245.5:2001JAN12	353	372	forward 3	TM	Transmembrane
49	LI:765245.5:2001JAN12	373	384	forward 3	TM	Cytosolic
49	LI:765245.5:2001JAN12	385	407	forward 3	TM	Transmembrane
49	LI:765245.5:2001JAN12	408	765	forward 3	TM	Non-cytosolic
50	LI:335608.2:2001JAN12	1	19	forward 2	TM	Non-cytosolic
50	LI:335608.2:2001JAN12	20	42	forward 2	TM	Transmembrane
50	LI:335608.2:2001JAN12	43	251	forward 2	TM	Cytosolic
50	LI:335608.2:2001JAN12	252	269	forward 2	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
50	LI:335608.2:2001JAN12	270	335	forward 2	TM	Non-cytosolic
50	LI:335608.2:2001JAN12	336	358	forward 2	TM	Transmembrane
50	LI:335608.2:2001JAN12	359	365	forward 2	TM	Cytosolic
50	LI:335608.2:2001JAN12	1	19	forward 3	TM	Non-cytosolic
50	LI:335608.2:2001JAN12	20	42	forward 3	TM	Transmembrane
50	LI:335608.2:2001JAN12	43	53	forward 3	TM	Cytosolic
50	LI:335608.2:2001JAN12	54	76	forward 3	TM	Transmembrane
50	LI:335608.2:2001JAN12	77	251	forward 3	TM	Non-cytosolic
50	LI:335608.2:2001JAN12	252	269	forward 3	TM	Transmembrane
50	LI:335608.2:2001JAN12	270	291	forward 3	TM	Cytosolic
50	LI:335608.2:2001JAN12	292	311	forward 3	TM	Transmembrane
50	LI:335608.2:2001JAN12	312	323	forward 3	TM	Non-cytosolic
50	LI:335608.2:2001JAN12	324	346	forward 3	TM	Transmembrane
50	LI:335608.2:2001JAN12	347	365	forward 3	TM	Cytosolic
51	LI:405795.1:2001JAN12	1	36	forward 1	TM	Cytosolic
51	LI:405795.1:2001JAN12	37	59	forward 1	TM	Transmembrane
51	LI:405795.1:2001JAN12	60	339	forward 1	TM	Non-cytosolic
51	LI:405795.1:2001JAN12	340	362	forward 1	TM	Transmembrane
51	LI:405795.1:2001JAN12	363	692	forward 1	TM	Cytosolic
51	LI:405795.1:2001JAN12	693	715	forward 1	TM	Transmembrane
51	LI:405795.1:2001JAN12	716	719	forward 1	TM	Non-cytosolic
51	LI:405795.1:2001JAN12	720	742	forward 1	TM	Transmembrane
51	LI:405795.1:2001JAN12	743	746	forward 1	TM	Cytosolic
51	LI:405795.1:2001JAN12	1	139	forward 2	TM	Non-cytosolic
51	LI:405795.1:2001JAN12	140	162	forward 2	TM	Transmembrane
51	LI:405795.1:2001JAN12	163	316	forward 2	TM	Cytosolic
51	LI:405795.1:2001JAN12	317	339	forward 2	TM	Transmembrane
51	LI:405795.1:2001JAN12	340	418	forward 2	TM	Non-cytosolic
51	LI:405795.1:2001JAN12	419	441	forward 2	TM	Transmembrane
51	LI:405795.1:2001JAN12	442	699	forward 2	TM	Cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
51	LI:405795.1:2001JAN12	700	722	forward 2	TM	Transmembrane
51	LI:405795.1:2001JAN12	723	745	forward 2	TM	Non-cytosolic
51	LI:405795.1:2001JAN12	1	54	forward 3	TM	Non-cytosolic
51	LI:405795.1:2001JAN12	55	77	forward 3	TM	Transmembrane
51	LI:405795.1:2001JAN12	78	421	forward 3	TM	Cytosolic
51	LI:405795.1:2001JAN12	422	444	forward 3	TM	Transmembrane
51	LI:405795.1:2001JAN12	445	696	forward 3	TM	Non-cytosolic
51	LI:405795.1:2001JAN12	697	719	forward 3	TM	Transmembrane
51	LI:405795.1:2001JAN12	720	745	forward 3	TM	Cytosolic
52	LI:014872.1:2001JAN12	1	44	forward 1	TM	Cytosolic
52	LI:014872.1:2001JAN12	45	64	forward 1	TM	Transmembrane
52	LI:014872.1:2001JAN12	65	97	forward 1	TM	Non-cytosolic
52	LI:014872.1:2001JAN12	98	120	forward 1	TM	Transmembrane
52	LI:014872.1:2001JAN12	121	453	forward 1	TM	Cytosolic
53	LI:239245.3:2001JAN12	1	19	forward 1	TM	Non-cytosolic
53	LI:239245.3:2001JAN12	20	42	forward 1	TM	Transmembrane
53	LI:239245.3:2001JAN12	43	164	forward 1	TM	Cytosolic
53	LI:239245.3:2001JAN12	165	187	forward 1	TM	Transmembrane
53	LI:239245.3:2001JAN12	188	817	forward 1	TM	Non-cytosolic
53	LI:239245.3:2001JAN12	818	840	forward 1	TM	Transmembrane
53	LI:239245.3:2001JAN12	841	877	forward 1	TM	Cytosolic
53	LI:239245.3:2001JAN12	1	810	forward 2	TM	Non-cytosolic
53	LI:239245.3:2001JAN12	811	833	forward 2	TM	Transmembrane
53	LI:239245.3:2001JAN12	834	877	forward 2	TM	Cytosolic
53	LI:239245.3:2001JAN12	1	810	forward 3	TM	Non-cytosolic
53	LI:239245.3:2001JAN12	811	833	forward 3	TM	Transmembrane
53	LI:239245.3:2001JAN12	834	877	forward 3	TM	Cytosolic
54	LI:142384.5:2001JAN12	1	574	forward 2	TM	Non-cytosolic
54	LI:142384.5:2001JAN12	575	597	forward 2	TM	Transmembrane
54	LI:142384.5:2001JAN12	598	725	forward 2	TM	Cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
54	LI:142384.5:2001JAN12	726	748	forward 2	TM	Transmembrane
54	LI:142384.5:2001JAN12	749	752	forward 2	TM	Non-cytosolic
54	LI:142384.5:2001JAN12	753	775	forward 2	TM	Transmembrane
54	LI:142384.5:2001JAN12	776	995	forward 2	TM	Cytosolic
54	LI:142384.5:2001JAN12	996	1015	forward 2	TM	Transmembrane
54	LI:142384.5:2001JAN12	1016	1018	forward 2	TM	Non-cytosolic
55	LI:2068768.1:2001JAN12	1	140	forward 2	TM	Cytosolic
55	LI:2068768.1:2001JAN12	141	163	forward 2	TM	Transmembrane
55	LI:2068768.1:2001JAN12	164	169	forward 2	TM	Non-cytosolic
56	LI:2118074.1:2001JAN12	1	51	forward 3	TM	Cytosolic
56	LI:2118074.1:2001JAN12	52	74	forward 3	TM	Transmembrane
56	LI:2118074.1:2001JAN12	75	88	forward 3	TM	Non-cytosolic
56	LI:2118074.1:2001JAN12	89	106	forward 3	TM	Transmembrane
56	LI:2118074.1:2001JAN12	107	145	forward 3	TM	Cytosolic
56	LI:2118074.1:2001JAN12	146	168	forward 3	TM	Transmembrane
56	LI:2118074.1:2001JAN12	169	178	forward 3	TM	Non-cytosolic
57	LI:1189068.4:2001JAN12	1	562	forward 3	TM	Non-cytosolic
57	LI:1189068.4:2001JAN12	563	585	forward 3	TM	Transmembrane
57	LI:1189068.4:2001JAN12	586	654	forward 3	TM	Cytosolic
58	LI:2118704.1:2001JAN12	1	33	forward 3	TM	Non-cytosolic
58	LI:2118704.1:2001JAN12	34	56	forward 3	TM	Transmembrane
58	LI:2118704.1:2001JAN12	57	60	forward 3	TM	Cytosolic
58	LI:2118704.1:2001JAN12	61	83	forward 3	TM	Transmembrane
58	LI:2118704.1:2001JAN12	84	339	forward 3	TM	Non-cytosolic
59	LI:031700.2:2001JAN12	1	237	forward 1	TM	Cytosolic
59	LI:031700.2:2001JAN12	238	260	forward 1	TM	Transmembrane
59	LI:031700.2:2001JAN12	261	269	forward 1	TM	Non-cytosolic
59	LI:031700.2:2001JAN12	270	292	forward 1	TM	Transmembrane
59	LI:031700.2:2001JAN12	293	389	forward 1	TM	Cytosolic
59	LI:031700.2:2001JAN12	390	412	forward 1	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
59	LI:031700.2:2001JAN12	413	847	forward 1	TM	Non-cytosolic
59	LI:031700.2:2001JAN12	1	99	forward 2	TM	Non-cytosolic
59	LI:031700.2:2001JAN12	100	119	forward 2	TM	Transmembrane
59	LI:031700.2:2001JAN12	120	251	forward 2	TM	Cytosolic
59	LI:031700.2:2001JAN12	252	271	forward 2	TM	Transmembrane
59	LI:031700.2:2001JAN12	272	274	forward 2	TM	Non-cytosolic
59	LI:031700.2:2001JAN12	275	294	forward 2	TM	Transmembrane
59	LI:031700.2:2001JAN12	295	388	forward 2	TM	Cytosolic
59	LI:031700.2:2001JAN12	389	411	forward 2	TM	Transmembrane
59	LI:031700.2:2001JAN12	412	420	forward 2	TM	Non-cytosolic
59	LI:031700.2:2001JAN12	421	443	forward 2	TM	Transmembrane
59	LI:031700.2:2001JAN12	444	488	forward 2	TM	Cytosolic
59	LI:031700.2:2001JAN12	489	508	forward 2	TM	Transmembrane
59	LI:031700.2:2001JAN12	509	847	forward 2	TM	Non-cytosolic
59	LI:031700.2:2001JAN12	1	4	forward 3	TM	Non-cytosolic
59	LI:031700.2:2001JAN12	5	22	forward 3	TM	Transmembrane
59	LI:031700.2:2001JAN12	23	97	forward 3	TM	Cytosolic
59	LI:031700.2:2001JAN12	98	120	forward 3	TM	Transmembrane
59	LI:031700.2:2001JAN12	121	245	forward 3	TM	Non-cytosolic
59	LI:031700.2:2001JAN12	246	268	forward 3	TM	Transmembrane
59	LI:031700.2:2001JAN12	269	274	forward 3	TM	Cytosolic
59	LI:031700.2:2001JAN12	275	294	forward 3	TM	Transmembrane
59	LI:031700.2:2001JAN12	295	846	forward 3	TM	Non-cytosolic
60	LI:2120122.1:2001JAN12	1	25	forward 1	TM	Cytosolic
60	LI:2120122.1:2001JAN12	26	48	forward 1	TM	Transmembrane
60	LI:2120122.1:2001JAN12	49	267	forward 1	TM	Non-cytosolic
60	LI:2120122.1:2001JAN12	268	287	forward 1	TM	Transmembrane
60	LI:2120122.1:2001JAN12	288	299	forward 1	TM	Cytosolic
60	LI:2120122.1:2001JAN12	300	322	forward 1	TM	Transmembrane
60	LI:2120122.1:2001JAN12	323	350	forward 1	TM	Non-cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
60	LI:2120122.1:2001JAN12	351	373	forward 1	TM	Transmembrane
60	LI:2120122.1:2001JAN12	374	443	forward 1	TM	Cytosolic
60	LI:2120122.1:2001JAN12	444	466	forward 1	TM	Transmembrane
60	LI:2120122.1:2001JAN12	467	470	forward 1	TM	Non-cytosolic
60	LI:2120122.1:2001JAN12	471	493	forward 1	TM	Transmembrane
60	LI:2120122.1:2001JAN12	494	505	forward 1	TM	Cytosolic
60	LI:2120122.1:2001JAN12	506	528	forward 1	TM	Transmembrane
60	LI:2120122.1:2001JAN12	529	586	forward 1	TM	Non-cytosolic
60	LI:2120122.1:2001JAN12	1	122	forward 2	TM	Non-cytosolic
60	LI:2120122.1:2001JAN12	123	142	forward 2	TM	Transmembrane
60	LI:2120122.1:2001JAN12	143	148	forward 2	TM	Cytosolic
60	LI:2120122.1:2001JAN12	149	171	forward 2	TM	Transmembrane
60	LI:2120122.1:2001JAN12	172	462	forward 2	TM	Non-cytosolic
60	LI:2120122.1:2001JAN12	463	485	forward 2	TM	Transmembrane
60	LI:2120122.1:2001JAN12	486	586	forward 2	TM	Cytosolic
60	LI:2120122.1:2001JAN12	1	23	forward 3	TM	Non-cytosolic
60	LI:2120122.1:2001JAN12	24	46	forward 3	TM	Transmembrane
60	LI:2120122.1:2001JAN12	47	65	forward 3	TM	Cytosolic
60	LI:2120122.1:2001JAN12	66	85	forward 3	TM	Transmembrane
60	LI:2120122.1:2001JAN12	86	254	forward 3	TM	Non-cytosolic
60	LI:2120122.1:2001JAN12	255	277	forward 3	TM	Transmembrane
60	LI:2120122.1:2001JAN12	278	425	forward 3	TM	Cytosolic
60	LI:2120122.1:2001JAN12	426	448	forward 3	TM	Transmembrane
60	LI:2120122.1:2001JAN12	449	467	forward 3	TM	Non-cytosolic
60	LI:2120122.1:2001JAN12	468	490	forward 3	TM	Transmembrane
60	LI:2120122.1:2001JAN12	491	496	forward 3	TM	Cytosolic
60	LI:2120122.1:2001JAN12	497	515	forward 3	TM	Transmembrane
60	LI:2120122.1:2001JAN12	516	585	forward 3	TM	Non-cytosolic
61	LI:816174.1:2001JAN12	1	277	forward 3	TM	Non-cytosolic
61	LI:816174.1:2001JAN12	278	300	forward 3	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
61	LI:816174.1:2001JAN12	301	344	forward 3	TM	Cytosolic
62	LI:1189569.11:2001JAN12	1	12	forward 1	TM	Cytosolic
62	LI:1189569.11:2001JAN12	13	35	forward 1	TM	Transmembrane
62	LI:1189569.11:2001JAN12	36	305	forward 1	TM	Non-cytosolic
62	LI:1189569.11:2001JAN12	1	184	forward 2	TM	Non-cytosolic
62	LI:1189569.11:2001JAN12	185	207	forward 2	TM	Transmembrane
62	LI:1189569.11:2001JAN12	208	304	forward 2	TM	Cytosolic
63	LI:413584.1:2001JAN12	1	4	forward 2	TM	Non-cytosolic
63	LI:413584.1:2001JAN12	5	24	forward 2	TM	Transmembrane
63	LI:413584.1:2001JAN12	25	72	forward 2	TM	Cytosolic
63	LI:413584.1:2001JAN12	73	95	forward 2	TM	Transmembrane
63	LI:413584.1:2001JAN12	96	445	forward 2	TM	Non-cytosolic
64	LI:791042.1:2001JAN12	1	392	forward 2	TM	Non-cytosolic
64	LI:791042.1:2001JAN12	393	415	forward 2	TM	Transmembrane
64	LI:791042.1:2001JAN12	416	434	forward 2	TM	Cytosolic
64	LI:791042.1:2001JAN12	435	457	forward 2	TM	Transmembrane
64	LI:791042.1:2001JAN12	458	487	forward 2	TM	Non-cytosolic
65	LI:1167140.1:2001JAN12	1	444	forward 1	TM	Non-cytosolic
65	LI:1167140.1:2001JAN12	445	467	forward 1	TM	Transmembrane
65	LI:1167140.1:2001JAN12	468	519	forward 1	TM	Cytosolic
65	LI:1167140.1:2001JAN12	1	444	forward 2	TM	Non-cytosolic
65	LI:1167140.1:2001JAN12	445	467	forward 2	TM	Transmembrane
65	LI:1167140.1:2001JAN12	468	519	forward 2	TM	Cytosolic
65	LI:1167140.1:2001JAN12	1	367	forward 3	TM	Non-cytosolic
65	LI:1167140.1:2001JAN12	368	387	forward 3	TM	Transmembrane
65	LI:1167140.1:2001JAN12	388	423	forward 3	TM	Cytosolic
65	LI:1167140.1:2001JAN12	424	446	forward 3	TM	Transmembrane
65	LI:1167140.1:2001JAN12	447	450	forward 3	TM	Non-cytosolic
65	LI:1167140.1:2001JAN12	451	473	forward 3	TM	Transmembrane
65	LI:1167140.1:2001JAN12	474	485	forward 3	TM	Cytosolic

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
65	LI:1167140.1:2001JAN12	486	508	forward 3	TM	Transmembrane
65	LI:1167140.1:2001JAN12	509	518	forward 3	TM	Non-cytosolic
66	LI:054831.1:2001JAN12	1	3	forward 2	TM	Non-cytosolic
66	LI:054831.1:2001JAN12	4	21	forward 2	TM	Transmembrane
66	LI:054831.1:2001JAN12	22	51	forward 2	TM	Cytosolic
66	LI:054831.1:2001JAN12	52	74	forward 2	TM	Transmembrane
66	LI:054831.1:2001JAN12	75	603	forward 2	TM	Non-cytosolic
67	LI:1175083.1:2001JAN12	1	326	forward 3	TM	Non-cytosolic
67	LI:1175083.1:2001JAN12	327	349	forward 3	TM	Transmembrane
67	LI:1175083.1:2001JAN12	350	354	forward 3	TM	Cytosolic
68	LI:2122897.2:2001JAN12	1	402	forward 2	TM	Non-cytosolic
68	LI:2122897.2:2001JAN12	403	425	forward 2	TM	Transmembrane
68	LI:2122897.2:2001JAN12	426	467	forward 2	TM	Cytosolic
68	LI:2122897.2:2001JAN12	1	391	forward 3	TM	Non-cytosolic
68	LI:2122897.2:2001JAN12	392	414	forward 3	TM	Transmembrane
68	LI:2122897.2:2001JAN12	415	466	forward 3	TM	Cytosolic
69	LI:2053195.3:2001JAN12	1	9	forward 3	TM	Non-cytosolic
69	LI:2053195.3:2001JAN12	10	28	forward 3	TM	Transmembrane
69	LI:2053195.3:2001JAN12	29	101	forward 3	TM	Cytosolic
70	LI:439397.6:2001JAN12	1	407	forward 3	TM	Non-cytosolic
70	LI:439397.6:2001JAN12	408	430	forward 3	TM	Transmembrane
70	LI:439397.6:2001JAN12	431	453	forward 3	TM	Cytosolic
71	LI:816379.6:2001JAN12	1	129	forward 1	TM	Cytosolic
71	LI:816379.6:2001JAN12	130	147	forward 1	TM	Transmembrane
71	LI:816379.6:2001JAN12	148	150	forward 1	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	151	173	forward 1	TM	Transmembrane
71	LI:816379.6:2001JAN12	174	211	forward 1	TM	Cytosolic
71	LI:816379.6:2001JAN12	212	234	forward 1	TM	Transmembrane
71	LI:816379.6:2001JAN12	235	633	forward 1	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	634	653	forward 1	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
71	LI:816379.6:2001JAN12	654	659	forward 1	TM	Cytosolic
71	LI:816379.6:2001JAN12	660	682	forward 1	TM	Transmembrane
71	LI:816379.6:2001JAN12	683	734	forward 1	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	1	37	forward 2	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	38	60	forward 2	TM	Transmembrane
71	LI:816379.6:2001JAN12	61	79	forward 2	TM	Cytosolic
71	LI:816379.6:2001JAN12	80	102	forward 2	TM	Transmembrane
71	LI:816379.6:2001JAN12	103	144	forward 2	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	145	167	forward 2	TM	Transmembrane
71	LI:816379.6:2001JAN12	168	212	forward 2	TM	Cytosolic
71	LI:816379.6:2001JAN12	213	232	forward 2	TM	Transmembrane
71	LI:816379.6:2001JAN12	233	289	forward 2	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	290	307	forward 2	TM	Transmembrane
71	LI:816379.6:2001JAN12	308	394	forward 2	TM	Cytosolic
71	LI:816379.6:2001JAN12	395	414	forward 2	TM	Transmembrane
71	LI:816379.6:2001JAN12	415	418	forward 2	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	419	441	forward 2	TM	Transmembrane
71	LI:816379.6:2001JAN12	442	447	forward 2	TM	Cytosolic
71	LI:816379.6:2001JAN12	448	470	forward 2	TM	Transmembrane
71	LI:816379.6:2001JAN12	471	734	forward 2	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	1	39	forward 3	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	40	62	forward 3	TM	Transmembrane
71	LI:816379.6:2001JAN12	63	132	forward 3	TM	Cytosolic
71	LI:816379.6:2001JAN12	133	155	forward 3	TM	Transmembrane
71	LI:816379.6:2001JAN12	156	281	forward 3	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	282	304	forward 3	TM	Transmembrane
71	LI:816379.6:2001JAN12	305	399	forward 3	TM	Cytosolic
71	LI:816379.6:2001JAN12	400	422	forward 3	TM	Transmembrane
71	LI:816379.6:2001JAN12	423	436	forward 3	TM	Non-cytosolic
71	LI:816379.6:2001JAN12	437	459	forward 3	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
71	LI:816379.6:2001JAN12	460	629	forward 3	TM	Cytosolic
71	LI:816379.6:2001JAN12	630	652	forward 3	TM	Transmembrane
71	LI:816379.6:2001JAN12	653	734	forward 3	TM	Non-cytosolic
72	LI:2123452.4:2001JAN12	1	36	forward 1	TM	Non-cytosolic
72	LI:2123452.4:2001JAN12	37	59	forward 1	TM	Transmembrane
72	LI:2123452.4:2001JAN12	60	60	forward 1	TM	Cytosolic
72	LI:2123452.4:2001JAN12	61	78	forward 1	TM	Transmembrane
72	LI:2123452.4:2001JAN12	79	87	forward 1	TM	Non-cytosolic
72	LI:2123452.4:2001JAN12	88	110	forward 1	TM	Transmembrane
72	LI:2123452.4:2001JAN12	111	156	forward 1	TM	Cytosolic
72	LI:2123452.4:2001JAN12	1	28	forward 2	TM	Cytosolic
72	LI:2123452.4:2001JAN12	29	51	forward 2	TM	Transmembrane
72	LI:2123452.4:2001JAN12	52	65	forward 2	TM	Non-cytosolic
72	LI:2123452.4:2001JAN12	66	88	forward 2	TM	Transmembrane
72	LI:2123452.4:2001JAN12	89	156	forward 2	TM	Cytosolic
73	LI:474559.8:2001JAN12	1	110	forward 1	TM	Non-cytosolic
73	LI:474559.8:2001JAN12	111	133	forward 1	TM	Transmembrane
73	LI:474559.8:2001JAN12	134	215	forward 1	TM	Cytosolic
73	LI:474559.8:2001JAN12	1	175	forward 2	TM	Cytosolic
73	LI:474559.8:2001JAN12	176	198	forward 2	TM	Transmembrane
73	LI:474559.8:2001JAN12	199	215	forward 2	TM	Non-cytosolic
73	LI:474559.8:2001JAN12	1	215	forward 3	TM	Cytosolic
74	LI:1089871.1:2001JAN12	1	218	forward 2	TM	Cytosolic
74	LI:1089871.1:2001JAN12	219	241	forward 2	TM	Transmembrane
74	LI:1089871.1:2001JAN12	242	282	forward 2	TM	Non-cytosolic
74	LI:1089871.1:2001JAN12	283	305	forward 2	TM	Transmembrane
74	LI:1089871.1:2001JAN12	306	380	forward 2	TM	Cytosolic
74	LI:1089871.1:2001JAN12	381	400	forward 2	TM	Transmembrane
74	LI:1089871.1:2001JAN12	401	437	forward 2	TM	Non-cytosolic
74	LI:1089871.1:2001JAN12	438	460	forward 2	TM	Transmembrane

TABLE 2

SEQ ID NO:	Template ID	Start	Stop	Frame	Domain Type	Topology
74	LI:1089871.1:2001JAN12	461	614	forward 2	TM	Cytosolic
74	LI:1089871.1:2001JAN12	615	637	forward 2	TM	Transmembrane
74	LI:1089871.1:2001JAN12	638	760	forward 2	TM	Non-cytosolic
74	LI:1089871.1:2001JAN12	1	221	forward 3	TM	Cytosolic
74	LI:1089871.1:2001JAN12	222	244	forward 3	TM	Transmembrane
74	LI:1089871.1:2001JAN12	245	271	forward 3	TM	Non-cytosolic
74	LI:1089871.1:2001JAN12	272	289	forward 3	TM	Transmembrane
74	LI:1089871.1:2001JAN12	290	437	forward 3	TM	Cytosolic
74	LI:1089871.1:2001JAN12	438	460	forward 3	TM	Transmembrane
74	LI:1089871.1:2001JAN12	461	760	forward 3	TM	Non-cytosolic
75	LI:289608.1:2001JAN12	1	148	forward 2	TM	Cytosolic
75	LI:289608.1:2001JAN12	149	171	forward 2	TM	Transmembrane
75	LI:289608.1:2001JAN12	172	180	forward 2	TM	Non-cytosolic
75	LI:289608.1:2001JAN12	181	203	forward 2	TM	Transmembrane
75	LI:289608.1:2001JAN12	204	220	forward 2	TM	Cytosolic
75	LI:289608.1:2001JAN12	1	184	forward 3	TM	Non-cytosolic
75	LI:289608.1:2001JAN12	185	207	forward 3	TM	Transmembrane
75	LI:289608.1:2001JAN12	208	219	forward 3	TM	Cytosolic

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
1	LI:418914.1:2001JAN12	4029796F6	268	553
1	LI:418914.1:2001JAN12	4029796H1	268	524
1	LI:418914.1:2001JAN12	g4988429	303	758
1	LI:418914.1:2001JAN12	g1101061	352	513
1	LI:418914.1:2001JAN12	g5633945	359	758
1	LI:418914.1:2001JAN12	g3078225	383	758
1	LI:418914.1:2001JAN12	71259473V1	1063	1416
1	LI:418914.1:2001JAN12	5998440H1	1107	1416
1	LI:418914.1:2001JAN12	5051546T6	1218	1423
1	LI:418914.1:2001JAN12	5834482H1	1349	1507
1	LI:418914.1:2001JAN12	5834482T6	1349	1525
1	LI:418914.1:2001JAN12	7586321H2	646	1257
1	LI:418914.1:2001JAN12	5051546F6	819	1234
1	LI:418914.1:2001JAN12	5051546H1	819	1046
1	LI:418914.1:2001JAN12	8066123J1	833	1401
1	LI:418914.1:2001JAN12	4659880H1	32	279
1	LI:418914.1:2001JAN12	g1126083	166	544
1	LI:418914.1:2001JAN12	4029796T6	261	527
1	LI:418914.1:2001JAN12	5726505H1	1	383
1	LI:418914.1:2001JAN12	046079H1	22	158
2	LI:246108.7:2001JAN12	g1696312	457	748
2	LI:246108.7:2001JAN12	g2194270	434	744
2	LI:246108.7:2001JAN12	3852492T6	196	723
2	LI:246108.7:2001JAN12	6888706J1	48	648
2	LI:246108.7:2001JAN12	3852492F6	148	617
2	LI:246108.7:2001JAN12	3852492H1	149	429
2	LI:246108.7:2001JAN12	g2194338	1	339
3	LI:204262.2:2001JAN12	g1267547	815	1122
3	LI:204262.2:2001JAN12	g3037719	822	1113
3	LI:204262.2:2001JAN12	g3330198	830	1115
3	LI:204262.2:2001JAN12	g762085	832	1089
3	LI:204262.2:2001JAN12	g5663772	840	1111
3	LI:204262.2:2001JAN12	g2054071	842	1132
3	LI:204262.2:2001JAN12	g2838446	845	1109
3	LI:204262.2:2001JAN12	g921316	850	1119
3	LI:204262.2:2001JAN12	g921478	856	1090
3	LI:204262.2:2001JAN12	g6401369	869	1115
3	LI:204262.2:2001JAN12	3009683H1	875	1022
3	LI:204262.2:2001JAN12	g5863680	882	1115
3	LI:204262.2:2001JAN12	g5904949	5	398
3	LI:204262.2:2001JAN12	6886754J1	8	371
3	LI:204262.2:2001JAN12	2651027H1	14	269
3	LI:204262.2:2001JAN12	2864552H1	13	311
3	LI:204262.2:2001JAN12	3798411H1	18	295
3	LI:204262.2:2001JAN12	3056428H1	24	239
3	LI:204262.2:2001JAN12	g5325960	165	407
3	LI:204262.2:2001JAN12	4405093H1	177	423
3	LI:204262.2:2001JAN12	7710231H1	197	785
3	LI:204262.2:2001JAN12	1316952H1	200	392

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
3	LI:204262.2:2001JAN12	5697164H1	208	392
3	LI:204262.2:2001JAN12	g1933501	302	392
3	LI:204262.2:2001JAN12	3085446H1	317	591
3	LI:204262.2:2001JAN12	4370458H1	379	483
3	LI:204262.2:2001JAN12	2429647H1	398	626
3	LI:204262.2:2001JAN12	g1301433	397	758
3	LI:204262.2:2001JAN12	1907484H1	399	658
3	LI:204262.2:2001JAN12	4407466H1	399	654
3	LI:204262.2:2001JAN12	1891084H1	399	662
3	LI:204262.2:2001JAN12	1907484F6	399	721
3	LI:204262.2:2001JAN12	5905191H1	409	558
3	LI:204262.2:2001JAN12	2905068H1	409	609
3	LI:204262.2:2001JAN12	8180656H1	409	840
3	LI:204262.2:2001JAN12	3669938H1	410	707
3	LI:204262.2:2001JAN12	3168274H1	415	695
3	LI:204262.2:2001JAN12	4370372H1	415	647
3	LI:204262.2:2001JAN12	1704319H1	414	623
3	LI:204262.2:2001JAN12	2113619H1	415	640
3	LI:204262.2:2001JAN12	663536H1	415	645
3	LI:204262.2:2001JAN12	3334434H1	409	540
3	LI:204262.2:2001JAN12	1955142H1	415	609
3	LI:204262.2:2001JAN12	2114652H1	419	688
3	LI:204262.2:2001JAN12	7077958H1	1	378
3	LI:204262.2:2001JAN12	2906317F6	1	373
3	LI:204262.2:2001JAN12	2906317H1	1	306
3	LI:204262.2:2001JAN12	2905586H1	3	269
3	LI:204262.2:2001JAN12	g7317508	4	384
3	LI:204262.2:2001JAN12	6450961H1	5	586
3	LI:204262.2:2001JAN12	2733223H1	483	763
3	LI:204262.2:2001JAN12	5490990H1	483	770
3	LI:204262.2:2001JAN12	4367028H1	493	738
3	LI:204262.2:2001JAN12	4368445H1	493	772
3	LI:204262.2:2001JAN12	4376291H1	499	755
3	LI:204262.2:2001JAN12	3427865H1	530	791
3	LI:204262.2:2001JAN12	6206254H1	530	1098
3	LI:204262.2:2001JAN12	g2054234	543	866
3	LI:204262.2:2001JAN12	5789606H1	546	837
3	LI:204262.2:2001JAN12	5795364H1	546	828
3	LI:204262.2:2001JAN12	g4533121	547	1019
3	LI:204262.2:2001JAN12	g847490	562	832
3	LI:204262.2:2001JAN12	g921174	563	873
3	LI:204262.2:2001JAN12	g921384	563	869
3	LI:204262.2:2001JAN12	6517347H1	577	1072
3	LI:204262.2:2001JAN12	1907484T6	591	981
3	LI:204262.2:2001JAN12	6713444H1	595	1006
3	LI:204262.2:2001JAN12	1569057H1	595	804
3	LI:204262.2:2001JAN12	6715344F8	609	1017
3	LI:204262.2:2001JAN12	g7278310	610	1017
3	LI:204262.2:2001JAN12	2905921H1	614	893

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
3	LI:204262.2:2001JAN12	g5370364	617	1027
3	LI:204262.2:2001JAN12	6715344F6	616	1006
3	LI:204262.2:2001JAN12	g5740750	617	1022
3	LI:204262.2:2001JAN12	g5510928	618	1017
3	LI:204262.2:2001JAN12	g3744370	626	1022
3	LI:204262.2:2001JAN12	1400614H1	627	860
3	LI:204262.2:2001JAN12	1396990H1	627	866
3	LI:204262.2:2001JAN12	1397508H1	627	870
3	LI:204262.2:2001JAN12	7710231J1	637	1123
3	LI:204262.2:2001JAN12	g4291140	644	1114
3	LI:204262.2:2001JAN12	g5425821	647	1113
3	LI:204262.2:2001JAN12	g5235945	661	1117
3	LI:204262.2:2001JAN12	g4533235	663	1118
3	LI:204262.2:2001JAN12	1333591H1	663	904
3	LI:204262.2:2001JAN12	g4524193	665	1116
3	LI:204262.2:2001JAN12	g8361553	665	1114
3	LI:204262.2:2001JAN12	g6835880	666	1117
3	LI:204262.2:2001JAN12	g4524592	667	1022
3	LI:204262.2:2001JAN12	g5675646	673	1129
3	LI:204262.2:2001JAN12	g5396644	679	1114
3	LI:204262.2:2001JAN12	2905087H1	419	689
3	LI:204262.2:2001JAN12	901294H1	419	717
3	LI:204262.2:2001JAN12	901294R1	419	909
3	LI:204262.2:2001JAN12	3986655H1	421	690
3	LI:204262.2:2001JAN12	g1955172	424	751
3	LI:204262.2:2001JAN12	2908149H1	421	713
3	LI:204262.2:2001JAN12	2904727H1	432	731
3	LI:204262.2:2001JAN12	3762093T6	436	1046
3	LI:204262.2:2001JAN12	3590473H1	452	751
3	LI:204262.2:2001JAN12	g1301395	469	692
3	LI:204262.2:2001JAN12	5101734H1	479	720
3	LI:204262.2:2001JAN12	g5744485	881	1114
3	LI:204262.2:2001JAN12	3513391H1	884	1104
3	LI:204262.2:2001JAN12	625181H1	892	1114
3	LI:204262.2:2001JAN12	g1264641	910	1115
3	LI:204262.2:2001JAN12	g6946728	917	1022
3	LI:204262.2:2001JAN12	5595731H1	1020	1112
3	LI:204262.2:2001JAN12	g2753547	742	932
3	LI:204262.2:2001JAN12	g2902957	742	888
3	LI:204262.2:2001JAN12	g1489513	745	1114
3	LI:204262.2:2001JAN12	g2834856	745	1114
3	LI:204262.2:2001JAN12	g3754537	754	1119
3	LI:204262.2:2001JAN12	g6041209	759	1114
3	LI:204262.2:2001JAN12	g2265306	759	1115
3	LI:204262.2:2001JAN12	g3037803	759	1110
3	LI:204262.2:2001JAN12	g7454306	764	1114
3	LI:204262.2:2001JAN12	g6086744	770	1115
3	LI:204262.2:2001JAN12	g3840509	770	1116
3	LI:204262.2:2001JAN12	2936147H1	771	985

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
3	LI:204262.2:2001JAN12	g4451711	777	1114
3	LI:204262.2:2001JAN12	1955142T6	780	1074
3	LI:204262.2:2001JAN12	g5913403	780	1109
3	LI:204262.2:2001JAN12	g3307161	783	1123
3	LI:204262.2:2001JAN12	g4269266	783	1110
3	LI:204262.2:2001JAN12	g4112857	784	1115
3	LI:204262.2:2001JAN12	g991164	804	1012
3	LI:204262.2:2001JAN12	g2559590	810	876
3	LI:204262.2:2001JAN12	g750913	810	1105
3	LI:204262.2:2001JAN12	g5765810	812	1115
3	LI:204262.2:2001JAN12	g1955173	681	1109
3	LI:204262.2:2001JAN12	g4313037	683	1123
3	LI:204262.2:2001JAN12	2557311H1	685	931
3	LI:204262.2:2001JAN12	2906317T6	685	1071
3	LI:204262.2:2001JAN12	1890505T6	689	985
3	LI:204262.2:2001JAN12	g5741913	689	1114
3	LI:204262.2:2001JAN12	g5448063	690	1117
3	LI:204262.2:2001JAN12	g3094351	690	1114
3	LI:204262.2:2001JAN12	g1435306	695	1083
3	LI:204262.2:2001JAN12	1890505H1	696	967
3	LI:204262.2:2001JAN12	g5394697	696	1114
3	LI:204262.2:2001JAN12	1890505F6	696	1010
3	LI:204262.2:2001JAN12	g7038913	697	1116
3	LI:204262.2:2001JAN12	g3077265	697	1118
3	LI:204262.2:2001JAN12	g847491	703	1088
3	LI:204262.2:2001JAN12	g4148492	697	1114
3	LI:204262.2:2001JAN12	g6568355	697	1023
3	LI:204262.2:2001JAN12	g5746321	702	1117
3	LI:204262.2:2001JAN12	g4217673	705	1114
3	LI:204262.2:2001JAN12	g1489512	707	970
3	LI:204262.2:2001JAN12	g1435257	709	1114
3	LI:204262.2:2001JAN12	g5673804	712	1114
3	LI:204262.2:2001JAN12	g2731988	713	1114
3	LI:204262.2:2001JAN12	g3756286	714	1114
3	LI:204262.2:2001JAN12	g7458416	716	1121
3	LI:204262.2:2001JAN12	g5632323	716	1116
3	LI:204262.2:2001JAN12	7616816H1	719	1109
3	LI:204262.2:2001JAN12	g2554351	741	1029
4	LI:331661.1:2001JAN12	g2877840	1353	1765
4	LI:331661.1:2001JAN12	1616667T6	1384	1731
4	LI:331661.1:2001JAN12	2245381H1	1387	1631
4	LI:331661.1:2001JAN12	7950056H1	1143	1615
4	LI:331661.1:2001JAN12	7449639T2	1150	1693
4	LI:331661.1:2001JAN12	7323804H1	1246	1770
4	LI:331661.1:2001JAN12	1428450T6	1235	1730
4	LI:331661.1:2001JAN12	g2713628	1266	1769
4	LI:331661.1:2001JAN12	5759911H1	1310	1523
4	LI:331661.1:2001JAN12	g3962036	1312	1776
4	LI:331661.1:2001JAN12	g2739724	1322	1768

TABLE 3

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4	LI:331661.1:2001JAN12	1939356T6	1332	1729
4	LI:331661.1:2001JAN12	g766482	868	1196
4	LI:331661.1:2001JAN12	261732H1	837	1132
4	LI:331661.1:2001JAN12	6120824H1	867	972
4	LI:331661.1:2001JAN12	6197894H1	748	1245
4	LI:331661.1:2001JAN12	6859071H1	798	1183
4	LI:331661.1:2001JAN12	7581096H1	569	1136
4	LI:331661.1:2001JAN12	5924705H1	589	876
4	LI:331661.1:2001JAN12	4716510H1	591	832
4	LI:331661.1:2001JAN12	6856463H1	601	1076
4	LI:331661.1:2001JAN12	1428450H1	624	862
4	LI:331661.1:2001JAN12	1428450F6	633	1095
4	LI:331661.1:2001JAN12	1229221H1	699	923
4	LI:331661.1:2001JAN12	7588474H1	727	1346
4	LI:331661.1:2001JAN12	7236708H1	728	1287
4	LI:331661.1:2001JAN12	6746047H1	1	522
4	LI:331661.1:2001JAN12	7583035H1	33	489
4	LI:331661.1:2001JAN12	1597748H1	78	196
4	LI:331661.1:2001JAN12	1594986H1	78	289
4	LI:331661.1:2001JAN12	1597748F6	78	558
4	LI:331661.1:2001JAN12	8000502H1	99	616
4	LI:331661.1:2001JAN12	7280607H1	107	182
4	LI:331661.1:2001JAN12	6448061H1	450	861
4	LI:331661.1:2001JAN12	4936496H1	499	776
4	LI:331661.1:2001JAN12	5843854H1	502	758
4	LI:331661.1:2001JAN12	3678519H1	1	152
4	LI:331661.1:2001JAN12	1415113H1	908	1157
4	LI:331661.1:2001JAN12	1413270H1	908	1153
4	LI:331661.1:2001JAN12	6338233H1	872	1400
4	LI:331661.1:2001JAN12	g1195372	880	1001
4	LI:331661.1:2001JAN12	5897575H1	889	1175
4	LI:331661.1:2001JAN12	5614128H1	889	1140
4	LI:331661.1:2001JAN12	5900984H1	889	1150
4	LI:331661.1:2001JAN12	6860421H1	924	1359
4	LI:331661.1:2001JAN12	1616667F6	802	1317
4	LI:331661.1:2001JAN12	5681028H1	822	1075
4	LI:331661.1:2001JAN12	1616624H1	802	1000
4	LI:331661.1:2001JAN12	1616667H1	804	939
4	LI:331661.1:2001JAN12	g2017728	1132	1405
4	LI:331661.1:2001JAN12	2283942T6	1120	1728
4	LI:331661.1:2001JAN12	7950056J1	1131	1701
4	LI:331661.1:2001JAN12	6560062H1	948	1468
4	LI:331661.1:2001JAN12	6560643H1	948	1471
4	LI:331661.1:2001JAN12	3825378H1	993	1288
4	LI:331661.1:2001JAN12	6199688H1	1078	1646
4	LI:331661.1:2001JAN12	2283942R6	1079	1516
4	LI:331661.1:2001JAN12	2283942H1	1079	1294

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
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4	LI:331661.1:2001JAN12	6715064H1	1419	1769
4	LI:331661.1:2001JAN12	2040660H1	1420	1691
4	LI:331661.1:2001JAN12	g1192246	1469	1768
4	LI:331661.1:2001JAN12	g823120	1529	1781
4	LI:331661.1:2001JAN12	g561300	1585	1769
4	LI:331661.1:2001JAN12	265807H1	1592	1721
4	LI:331661.1:2001JAN12	g3179666	1616	1772
5	LI:335074.1:2001JAN12	6836554H1	1	188
5	LI:335074.1:2001JAN12	2692045H1	30	172
5	LI:335074.1:2001JAN12	2692045F6	30	520
5	LI:335074.1:2001JAN12	g718636	97	172
5	LI:335074.1:2001JAN12	2692045T6	448	659
5	LI:335074.1:2001JAN12	g4509645	452	606
5	LI:335074.1:2001JAN12	2950136H1	471	528
5	LI:335074.1:2001JAN12	g718536	489	814
5	LI:335074.1:2001JAN12	2734584H1	521	659
5	LI:335074.1:2001JAN12	2734584F6	521	892
5	LI:335074.1:2001JAN12	503404H1	561	663
5	LI:335074.1:2001JAN12	2756506H1	594	659
6	LI:154608.1:2001JAN12	2279720H1	1	256
6	LI:154608.1:2001JAN12	2279720R6	1	463
6	LI:154608.1:2001JAN12	532191H1	1	240
6	LI:154608.1:2001JAN12	g4850584	53	341
6	LI:154608.1:2001JAN12	g1444656	83	374
6	LI:154608.1:2001JAN12	1832633H1	228	384
6	LI:154608.1:2001JAN12	1832633R6	228	754
6	LI:154608.1:2001JAN12	g1224646	299	730
6	LI:154608.1:2001JAN12	677523H1	535	758
7	LI:462889.1:2001JAN12	6012788F6	1	140
7	LI:462889.1:2001JAN12	6012788F8	1	140
7	LI:462889.1:2001JAN12	6012788H1	1	140
7	LI:462889.1:2001JAN12	6012788T8	1	67
7	LI:462889.1:2001JAN12	6915723H1	20	570
7	LI:462889.1:2001JAN12	7111920H2	101	719
7	LI:462889.1:2001JAN12	7262741H1	241	767
8	LI:236680.2:2001JAN12	3075331H1	2023	2312
8	LI:236680.2:2001JAN12	5532056H1	2026	2253
8	LI:236680.2:2001JAN12	g2913620	2029	2322
8	LI:236680.2:2001JAN12	481091R1	2037	2316
8	LI:236680.2:2001JAN12	481091H1	2037	2268
8	LI:236680.2:2001JAN12	481091F1	2037	2316
8	LI:236680.2:2001JAN12	642676H1	2042	2289
8	LI:236680.2:2001JAN12	645714H1	2042	2169
8	LI:236680.2:2001JAN12	4370936H1	2047	2322
8	LI:236680.2:2001JAN12	g3178618	2052	2327
8	LI:236680.2:2001JAN12	g1951323	2052	2322
8	LI:236680.2:2001JAN12	4369438H1	2060	2330
8	LI:236680.2:2001JAN12	g2752073	2066	2323

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
8	LI:236680.2:2001JAN12	g2557232	2074	2321
8	LI:236680.2:2001JAN12	2108868H1	2088	2322
8	LI:236680.2:2001JAN12	g3280026	2001	2327
8	LI:236680.2:2001JAN12	g1885612	2004	2322
8	LI:236680.2:2001JAN12	6891191J1	1218	1684
8	LI:236680.2:2001JAN12	616670H1	1222	1382
8	LI:236680.2:2001JAN12	2599521H1	1225	1536
8	LI:236680.2:2001JAN12	1564553H1	1227	1441
8	LI:236680.2:2001JAN12	1718424H1	1247	1452
8	LI:236680.2:2001JAN12	5734658H1	625	832
8	LI:236680.2:2001JAN12	3141286H1	626	920
8	LI:236680.2:2001JAN12	3118707H1	646	930
8	LI:236680.2:2001JAN12	428922H1	646	717
8	LI:236680.2:2001JAN12	7693331J2	658	1282
8	LI:236680.2:2001JAN12	202067H1	671	1013
8	LI:236680.2:2001JAN12	203102H1	669	1039
8	LI:236680.2:2001JAN12	202742H1	671	1096
8	LI:236680.2:2001JAN12	4656004H1	682	914
8	LI:236680.2:2001JAN12	354907H1	682	877
8	LI:236680.2:2001JAN12	4357096H1	689	802
8	LI:236680.2:2001JAN12	7065493H1	700	1264
8	LI:236680.2:2001JAN12	6443867H1	711	1272
8	LI:236680.2:2001JAN12	7748008H1	733	1315
8	LI:236680.2:2001JAN12	4696835H2	733	998
8	LI:236680.2:2001JAN12	2669248H1	734	974
8	LI:236680.2:2001JAN12	7666743H1	737	1307
8	LI:236680.2:2001JAN12	5138583H1	759	1043
8	LI:236680.2:2001JAN12	6344271H1	773	1064
8	LI:236680.2:2001JAN12	4780947H1	782	1025
8	LI:236680.2:2001JAN12	4442960H1	785	932
8	LI:236680.2:2001JAN12	2019004F6	792	1251
8	LI:236680.2:2001JAN12	2019004H1	792	1018
8	LI:236680.2:2001JAN12	7410429H1	808	1291
8	LI:236680.2:2001JAN12	5653870H1	809	1315
8	LI:236680.2:2001JAN12	4973318H1	823	1113
8	LI:236680.2:2001JAN12	3372215H1	828	1107
8	LI:236680.2:2001JAN12	g2824800	836	1152
8	LI:236680.2:2001JAN12	1834495H1	836	1073
8	LI:236680.2:2001JAN12	4891822H1	843	1099
8	LI:236680.2:2001JAN12	3737008H1	875	1053
8	LI:236680.2:2001JAN12	2222730H1	874	1133
8	LI:236680.2:2001JAN12	3056404H1	872	1187
8	LI:236680.2:2001JAN12	1528744H1	877	1089
8	LI:236680.2:2001JAN12	5832993H1	882	1120
8	LI:236680.2:2001JAN12	g1615059	887	1324
8	LI:236680.2:2001JAN12	5568088H1	893	1138
8	LI:236680.2:2001JAN12	4722031H1	894	1151
8	LI:236680.2:2001JAN12	g5657452	895	1316
8	LI:236680.2:2001JAN12	g4984832	899	1316

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
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8	LI:236680.2:2001JAN12	1743450R6	940	1477
8	LI:236680.2:2001JAN12	1743450H1	940	1209
8	LI:236680.2:2001JAN12	6881552J1	946	1565
8	LI:236680.2:2001JAN12	1492715H1	947	1175
8	LI:236680.2:2001JAN12	g1439952	949	1265
8	LI:236680.2:2001JAN12	g1745436	987	1320
8	LI:236680.2:2001JAN12	5283518H1	989	1101
8	LI:236680.2:2001JAN12	g4983084	999	1402
8	LI:236680.2:2001JAN12	5196591H1	1006	1219
8	LI:236680.2:2001JAN12	g1980081	1014	1300
8	LI:236680.2:2001JAN12	4585166H1	1029	1287
8	LI:236680.2:2001JAN12	3765524H1	1030	1329
8	LI:236680.2:2001JAN12	1322839H1	1030	1310
8	LI:236680.2:2001JAN12	5153956H1	1032	1278
8	LI:236680.2:2001JAN12	5657480H1	1033	1305
8	LI:236680.2:2001JAN12	g3933002	1040	1316
8	LI:236680.2:2001JAN12	3839495H1	1049	1321
8	LI:236680.2:2001JAN12	1807156H1	1052	1330
8	LI:236680.2:2001JAN12	2958652H1	1053	1317
8	LI:236680.2:2001JAN12	550594H1	1061	1215
8	LI:236680.2:2001JAN12	6130516H1	1065	1223
8	LI:236680.2:2001JAN12	g2437088	1066	1265
8	LI:236680.2:2001JAN12	2937202H1	1088	1317
8	LI:236680.2:2001JAN12	4531176H1	1095	1317
8	LI:236680.2:2001JAN12	5350661H1	1111	1317
8	LI:236680.2:2001JAN12	6756226J1	1136	1906
8	LI:236680.2:2001JAN12	4069427H1	1141	1419
8	LI:236680.2:2001JAN12	4441238H1	1145	1230
8	LI:236680.2:2001JAN12	2538184H1	1146	1317
8	LI:236680.2:2001JAN12	4440839H1	1146	1317
8	LI:236680.2:2001JAN12	2323415H1	1149	1310
8	LI:236680.2:2001JAN12	2323415R6	1149	1300
8	LI:236680.2:2001JAN12	4091523H1	1160	1451
8	LI:236680.2:2001JAN12	8180480H1	1168	1804
8	LI:236680.2:2001JAN12	g1275598	1173	1632
8	LI:236680.2:2001JAN12	4300822H1	1174	1453
8	LI:236680.2:2001JAN12	6072812H1	1178	1505
8	LI:236680.2:2001JAN12	4769465H1	1190	1454
8	LI:236680.2:2001JAN12	1785637H1	1190	1443
8	LI:236680.2:2001JAN12	4247606H1	1195	1451
8	LI:236680.2:2001JAN12	7355562H1	1205	1818
8	LI:236680.2:2001JAN12	6588333H1	1	514
8	LI:236680.2:2001JAN12	6928483H1	121	456
8	LI:236680.2:2001JAN12	g6701284	220	854
8	LI:236680.2:2001JAN12	4251648H1	243	519
8	LI:236680.2:2001JAN12	1310590T6	255	816
8	LI:236680.2:2001JAN12	7107227H1	292	544
8	LI:236680.2:2001JAN12	7933938H1	314	951

TABLE 3

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8	LI:236680.2:2001JAN12	g1615058	408	496
8	LI:236680.2:2001JAN12	6191223H1	413	716
8	LI:236680.2:2001JAN12	6936611H1	419	958
8	LI:236680.2:2001JAN12	5000044H2	440	702
8	LI:236680.2:2001JAN12	341967R6	445	887
8	LI:236680.2:2001JAN12	341967H1	445	552
8	LI:236680.2:2001JAN12	g4762563	444	852
8	LI:236680.2:2001JAN12	6336333H1	453	1006
8	LI:236680.2:2001JAN12	3780470H1	455	782
8	LI:236680.2:2001JAN12	3315977H1	464	744
8	LI:236680.2:2001JAN12	4320212H1	485	767
8	LI:236680.2:2001JAN12	2790779H1	496	782
8	LI:236680.2:2001JAN12	5497625H1	493	706
8	LI:236680.2:2001JAN12	g3918889	505	798
8	LI:236680.2:2001JAN12	5499074H1	497	687
8	LI:236680.2:2001JAN12	3405846H1	499	766
8	LI:236680.2:2001JAN12	2260358H1	527	791
8	LI:236680.2:2001JAN12	351557H1	527	763
8	LI:236680.2:2001JAN12	5906465H1	573	833
8	LI:236680.2:2001JAN12	g1885791	602	851
8	LI:236680.2:2001JAN12	1992305F6	621	1092
8	LI:236680.2:2001JAN12	880170H1	1809	2018
8	LI:236680.2:2001JAN12	2014995H1	1808	2063
8	LI:236680.2:2001JAN12	880170R1	1812	2321
8	LI:236680.2:2001JAN12	g2740731	1815	2322
8	LI:236680.2:2001JAN12	1722629H1	1817	2031
8	LI:236680.2:2001JAN12	1414184H1	1820	2081
8	LI:236680.2:2001JAN12	g5425815	1826	2320
8	LI:236680.2:2001JAN12	3470172H1	1837	2117
8	LI:236680.2:2001JAN12	5067002H1	1839	2062
8	LI:236680.2:2001JAN12	g4764199	1849	2325
8	LI:236680.2:2001JAN12	g5675041	1854	2325
8	LI:236680.2:2001JAN12	g1289941	1854	2333
8	LI:236680.2:2001JAN12	g3594344	1855	2327
8	LI:236680.2:2001JAN12	g1886363	1854	2284
8	LI:236680.2:2001JAN12	g1071482	1859	2169
8	LI:236680.2:2001JAN12	2614306T6	1868	2285
8	LI:236680.2:2001JAN12	6123995H1	1874	2220
8	LI:236680.2:2001JAN12	6124095H1	1874	2319
8	LI:236680.2:2001JAN12	g4308115	1878	2322
8	LI:236680.2:2001JAN12	4120305H1	1884	2157
8	LI:236680.2:2001JAN12	2285547H1	1889	2158
8	LI:236680.2:2001JAN12	g2903185	1891	2322
8	LI:236680.2:2001JAN12	2717291H1	1899	2156
8	LI:236680.2:2001JAN12	1511984T6	1902	2283
8	LI:236680.2:2001JAN12	g2902705	1903	2319
8	LI:236680.2:2001JAN12	2121490H1	1903	2190
8	LI:236680.2:2001JAN12	6891191H1	1906	2273

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
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8	LI:236680.2:2001JAN12	g2901559	1916	2317
8	LI:236680.2:2001JAN12	g1927650	1922	2327
8	LI:236680.2:2001JAN12	g1779557	1920	2322
8	LI:236680.2:2001JAN12	764247H1	1923	2225
8	LI:236680.2:2001JAN12	4909776H1	1922	2211
8	LI:236680.2:2001JAN12	g3246364	1924	2328
8	LI:236680.2:2001JAN12	g6034682	1924	2322
8	LI:236680.2:2001JAN12	g3400920	1928	2322
8	LI:236680.2:2001JAN12	g3921126	1931	2323
8	LI:236680.2:2001JAN12	g2184277	1931	2322
8	LI:236680.2:2001JAN12	g2789087	1931	2322
8	LI:236680.2:2001JAN12	5266178H1	1942	2100
8	LI:236680.2:2001JAN12	5268752H1	1943	2238
8	LI:236680.2:2001JAN12	g6034690	1950	2322
8	LI:236680.2:2001JAN12	g1071376	1960	2318
8	LI:236680.2:2001JAN12	g1190233	1962	2318
8	LI:236680.2:2001JAN12	g3134236	1962	2317
8	LI:236680.2:2001JAN12	g1921221	1962	2313
8	LI:236680.2:2001JAN12	4024449H1	1964	2154
8	LI:236680.2:2001JAN12	6449287H1	1970	2317
8	LI:236680.2:2001JAN12	4029205H1	1975	2241
8	LI:236680.2:2001JAN12	6446287H1	1974	2317
8	LI:236680.2:2001JAN12	1384614H1	1985	2247
8	LI:236680.2:2001JAN12	g2154287	1988	2314
8	LI:236680.2:2001JAN12	g1312625	1444	1937
8	LI:236680.2:2001JAN12	4400655H1	1445	1724
8	LI:236680.2:2001JAN12	g5109483	1451	1887
8	LI:236680.2:2001JAN12	5714792H1	1457	1769
8	LI:236680.2:2001JAN12	6706664H1	1469	1957
8	LI:236680.2:2001JAN12	5429194H1	1469	1757
8	LI:236680.2:2001JAN12	g2229268	1490	1902
8	LI:236680.2:2001JAN12	415958H1	1491	1737
8	LI:236680.2:2001JAN12	6756226H1	1501	2209
8	LI:236680.2:2001JAN12	200080H1	1512	1827
8	LI:236680.2:2001JAN12	200081H1	1512	1828
8	LI:236680.2:2001JAN12	5611292H1	1518	1799
8	LI:236680.2:2001JAN12	g1191362	1524	1680
8	LI:236680.2:2001JAN12	7336684H1	1563	1916
8	LI:236680.2:2001JAN12	2314511H1	1585	1833
8	LI:236680.2:2001JAN12	g6702138	1580	1892
8	LI:236680.2:2001JAN12	g3202284	1583	1896
8	LI:236680.2:2001JAN12	724515R1	1585	2156
8	LI:236680.2:2001JAN12	724515H1	1585	1825
8	LI:236680.2:2001JAN12	g6992823	1589	1892
8	LI:236680.2:2001JAN12	2886039H1	1613	1884
8	LI:236680.2:2001JAN12	2874078H1	1618	1916
8	LI:236680.2:2001JAN12	3702979H1	1619	1916
8	LI:236680.2:2001JAN12	2665478H1	1621	1887

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
8	LI:236680.2:2001JAN12	2370703H1	1622	1885
8	LI:236680.2:2001JAN12	5913623H1	1623	1931
8	LI:236680.2:2001JAN12	1915623H1	1625	1843
8	LI:236680.2:2001JAN12	5264651H2	1638	1907
8	LI:236680.2:2001JAN12	3825094H1	1645	1890
8	LI:236680.2:2001JAN12	993892T1	1707	1851
8	LI:236680.2:2001JAN12	497542H1	1724	1887
8	LI:236680.2:2001JAN12	g3253828	1725	2161
8	LI:236680.2:2001JAN12	2925528H1	1738	1906
8	LI:236680.2:2001JAN12	2244966H1	1743	1998
8	LI:236680.2:2001JAN12	4320814H1	1748	2035
8	LI:236680.2:2001JAN12	5303358H1	1758	1980
8	LI:236680.2:2001JAN12	3387208H1	1758	1976
8	LI:236680.2:2001JAN12	g2705585	1786	2314
8	LI:236680.2:2001JAN12	g1957960	1801	2285
8	LI:236680.2:2001JAN12	5901612H1	1806	2120
8	LI:236680.2:2001JAN12	1832942H1	1806	2088
8	LI:236680.2:2001JAN12	5894013H1	1806	1916
8	LI:236680.2:2001JAN12	g3433338	2095	2287
8	LI:236680.2:2001JAN12	5067691H1	2096	2326
8	LI:236680.2:2001JAN12	1916921H1	2136	2328
8	LI:236680.2:2001JAN12	2599527T6	2146	2285
8	LI:236680.2:2001JAN12	2560611H1	2169	2322
8	LI:236680.2:2001JAN12	g1241937	2178	2317
8	LI:236680.2:2001JAN12	2330769H1	2255	2326
8	LI:236680.2:2001JAN12	4773732H1	2264	2322
8	LI:236680.2:2001JAN12	g2805069	1417	1903
8	LI:236680.2:2001JAN12	3235380H1	1428	1698
8	LI:236680.2:2001JAN12	571475H1	1440	1661
8	LI:236680.2:2001JAN12	440467H1	1351	1489
8	LI:236680.2:2001JAN12	1948625H1	1353	1613
8	LI:236680.2:2001JAN12	5536452H1	1365	1521
8	LI:236680.2:2001JAN12	056288H1	1363	1535
8	LI:236680.2:2001JAN12	g1810092	1366	1580
8	LI:236680.2:2001JAN12	3486974H1	1370	1635
8	LI:236680.2:2001JAN12	1848282H1	1373	1651
8	LI:236680.2:2001JAN12	6881552H1	1377	1896
8	LI:236680.2:2001JAN12	053537H1	1378	1577
8	LI:236680.2:2001JAN12	413100H1	1380	1595
8	LI:236680.2:2001JAN12	6411776H1	1397	1926
8	LI:236680.2:2001JAN12	5946170H1	1409	1655
8	LI:236680.2:2001JAN12	3557711H1	1351	1632
8	LI:236680.2:2001JAN12	3159474H1	1351	1618
8	LI:236680.2:2001JAN12	4707470H1	1351	1599
8	LI:236680.2:2001JAN12	437494H1	1351	1558
8	LI:236680.2:2001JAN12	g2011273	1351	1541
8	LI:236680.2:2001JAN12	5376179H1	1351	1520
8	LI:236680.2:2001JAN12	g3039383	1312	1674
8	LI:236680.2:2001JAN12	g3429533	1312	1702

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
8	LI:236680.2:2001JAN12	g3048130	1313	1599
8	LI:236680.2:2001JAN12	1390588H1	1312	1436
8	LI:236680.2:2001JAN12	g1885716	1307	1722
8	LI:236680.2:2001JAN12	2075665H1	1308	1597
8	LI:236680.2:2001JAN12	2293582H1	1308	1585
8	LI:236680.2:2001JAN12	4707390H1	1310	1585
8	LI:236680.2:2001JAN12	4342282H1	1314	1517
8	LI:236680.2:2001JAN12	2019004T6	1336	1860
8	LI:236680.2:2001JAN12	6076309H1	1336	1598
8	LI:236680.2:2001JAN12	6034056H1	1338	2016
8	LI:236680.2:2001JAN12	g1313848	1346	1841
8	LI:236680.2:2001JAN12	5805420H1	1339	1667
8	LI:236680.2:2001JAN12	2222252H1	1341	1624
8	LI:236680.2:2001JAN12	6040024H1	1346	1986
8	LI:236680.2:2001JAN12	g1921327	1350	1669
8	LI:236680.2:2001JAN12	5854844H1	1346	1644
8	LI:236680.2:2001JAN12	6267478H1	1351	1892
8	LI:236680.2:2001JAN12	4082468H1	1248	1545
8	LI:236680.2:2001JAN12	1743450T6	1249	1861
8	LI:236680.2:2001JAN12	2101426H1	1253	1534
8	LI:236680.2:2001JAN12	1700062H1	1264	1489
8	LI:236680.2:2001JAN12	1698445H1	1264	1317
8	LI:236680.2:2001JAN12	2955049H1	1265	1515
8	LI:236680.2:2001JAN12	341967T6	1267	1861
8	LI:236680.2:2001JAN12	g2107080	1271	1661
8	LI:236680.2:2001JAN12	881668H1	1282	1553
8	LI:236680.2:2001JAN12	g2237266	2000	2323
8	LI:236680.2:2001JAN12	4081922H1	1247	1559
8	LI:236680.2:2001JAN12	3442789H1	2187	2322
8	LI:236680.2:2001JAN12	g2881308	2217	2317
8	LI:236680.2:2001JAN12	4907175H2	2233	2307
8	LI:236680.2:2001JAN12	g1238176	2242	2343
9	LI:228186.1:2001JAN12	2578858F6	3757	4250
9	LI:228186.1:2001JAN12	2578858H1	3757	4017
9	LI:228186.1:2001JAN12	g2183340	3767	4181
9	LI:228186.1:2001JAN12	g6716882	3769	4179
9	LI:228186.1:2001JAN12	g2783648	3788	4185
9	LI:228186.1:2001JAN12	g3674771	3791	4186
9	LI:228186.1:2001JAN12	1466016H1	3790	3973
9	LI:228186.1:2001JAN12	g3418449	3819	4179
9	LI:228186.1:2001JAN12	g4988753	3819	4180
9	LI:228186.1:2001JAN12	55037512H1	3841	4180
9	LI:228186.1:2001JAN12	g5234992	3842	4180
9	LI:228186.1:2001JAN12	g824803	3848	4273
9	LI:228186.1:2001JAN12	g5635255	3863	4128
9	LI:228186.1:2001JAN12	2117539H1	3866	4102
9	LI:228186.1:2001JAN12	5067110H1	3881	4160
9	LI:228186.1:2001JAN12	g4152912	3903	4180
9	LI:228186.1:2001JAN12	1572173T6	3915	4137

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
9	LI:228186.1:2001JAN12	2752418H1	3923	4171
9	LI:228186.1:2001JAN12	5697802H1	3927	4180
9	LI:228186.1:2001JAN12	2181068H1	3989	4179
9	LI:228186.1:2001JAN12	2729487T6	3990	4136
9	LI:228186.1:2001JAN12	g4739655	4009	4182
9	LI:228186.1:2001JAN12	g7277624	4009	4182
9	LI:228186.1:2001JAN12	g4740529	4009	4179
9	LI:228186.1:2001JAN12	3229045H1	4017	4181
9	LI:228186.1:2001JAN12	g4082575	4069	4171
9	LI:228186.1:2001JAN12	g4082569	4092	4171
9	LI:228186.1:2001JAN12	g4148819	4092	4161
9	LI:228186.1:2001JAN12	1209337H1	4110	4179
9	LI:228186.1:2001JAN12	2101282H1	4211	4427
9	LI:228186.1:2001JAN12	4227560H1	4257	4545
9	LI:228186.1:2001JAN12	7109046H1	4266	4806
9	LI:228186.1:2001JAN12	6535226H1	4275	4724
9	LI:228186.1:2001JAN12	3146996H1	4286	4551
9	LI:228186.1:2001JAN12	g1275619	4326	4781
9	LI:228186.1:2001JAN12	g692290	4326	4581
9	LI:228186.1:2001JAN12	2285278T6	4367	4967
9	LI:228186.1:2001JAN12	2355972F6	4387	4786
9	LI:228186.1:2001JAN12	2355972H1	4387	4613
9	LI:228186.1:2001JAN12	g6991850	4425	5011
9	LI:228186.1:2001JAN12	2578858T6	4515	4969
9	LI:228186.1:2001JAN12	542452T6	4516	4952
9	LI:228186.1:2001JAN12	542452R6	4516	4910
9	LI:228186.1:2001JAN12	542452H1	4516	4816
9	LI:228186.1:2001JAN12	g3431234	4521	5006
9	LI:228186.1:2001JAN12	2355972T6	4524	4968
9	LI:228186.1:2001JAN12	g3307941	4564	5012
9	LI:228186.1:2001JAN12	g4738418	4584	5011
9	LI:228186.1:2001JAN12	g3418990	4585	5011
9	LI:228186.1:2001JAN12	g5812478	4605	5011
9	LI:228186.1:2001JAN12	g4006328	4607	5011
9	LI:228186.1:2001JAN12	g768507	4623	5001
9	LI:228186.1:2001JAN12	3905873H1	4620	4870
9	LI:228186.1:2001JAN12	g2714597	4624	5011
9	LI:228186.1:2001JAN12	190176H1	4638	4866
9	LI:228186.1:2001JAN12	g1502034	4642	5011
9	LI:228186.1:2001JAN12	917566H1	4648	4740
9	LI:228186.1:2001JAN12	g2952679	4650	5017
9	LI:228186.1:2001JAN12	g692251	4660	5014
9	LI:228186.1:2001JAN12	g6835507	4660	5011
9	LI:228186.1:2001JAN12	g824186	4671	4999
9	LI:228186.1:2001JAN12	g566892	4699	5011
9	LI:228186.1:2001JAN12	g2669944	4710	5012
9	LI:228186.1:2001JAN12	g876930	4719	5001
9	LI:228186.1:2001JAN12	1357315T6	4725	4972
9	LI:228186.1:2001JAN12	6583355T1	3493	4089

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
9	LI:228186.1:2001JAN12	2285278R6	3496	3883
9	LI:228186.1:2001JAN12	2285278H1	3496	3739
9	LI:228186.1:2001JAN12	5947052H1	3499	3659
9	LI:228186.1:2001JAN12	667861T6	3514	4136
9	LI:228186.1:2001JAN12	2501382H1	3538	3766
9	LI:228186.1:2001JAN12	952741R1	3554	4080
9	LI:228186.1:2001JAN12	952741H1	3554	3817
9	LI:228186.1:2001JAN12	3055946H1	3566	3837
9	LI:228186.1:2001JAN12	2937765T6	3579	4165
9	LI:228186.1:2001JAN12	3525403H1	3583	3833
9	LI:228186.1:2001JAN12	700438R6	3605	3998
9	LI:228186.1:2001JAN12	700438H1	3605	3860
9	LI:228186.1:2001JAN12	699637H1	3605	3805
9	LI:228186.1:2001JAN12	700438T6	3605	4140
9	LI:228186.1:2001JAN12	1572292T6	3617	4139
9	LI:228186.1:2001JAN12	1572444T6	3617	4140
9	LI:228186.1:2001JAN12	5723113H1	3667	4223
9	LI:228186.1:2001JAN12	5723215H1	3667	4096
9	LI:228186.1:2001JAN12	3779008H1	3675	3979
9	LI:228186.1:2001JAN12	5649315H1	3699	3959
9	LI:228186.1:2001JAN12	g4390668	3708	4182
9	LI:228186.1:2001JAN12	g5231487	3715	4179
9	LI:228186.1:2001JAN12	g6709352	3720	4180
9	LI:228186.1:2001JAN12	g5526660	3724	4183
9	LI:228186.1:2001JAN12	g4175746	3739	4183
9	LI:228186.1:2001JAN12	727019H1	3740	4045
9	LI:228186.1:2001JAN12	g6132296	3745	4181
9	LI:228186.1:2001JAN12	568776H1	3749	4015
9	LI:228186.1:2001JAN12	g5444612	3750	4179
9	LI:228186.1:2001JAN12	g6028408	3750	4179
9	LI:228186.1:2001JAN12	70012310D1	2982	3368
9	LI:228186.1:2001JAN12	70004276D1	2982	3380
9	LI:228186.1:2001JAN12	70006106D1	2981	3222
9	LI:228186.1:2001JAN12	2937765H1	3008	3296
9	LI:228186.1:2001JAN12	2937765F6	3008	3503
9	LI:228186.1:2001JAN12	2863195H1	3111	3383
9	LI:228186.1:2001JAN12	8179891H1	3119	3612
9	LI:228186.1:2001JAN12	70001338D1	3123	3221
9	LI:228186.1:2001JAN12	70008533D1	3132	3221
9	LI:228186.1:2001JAN12	5867485H1	3134	3403
9	LI:228186.1:2001JAN12	781214H1	1607	1791
9	LI:228186.1:2001JAN12	g3900472	1677	1791
9	LI:228186.1:2001JAN12	667861R6	1716	2283
9	LI:228186.1:2001JAN12	667861H1	1716	1791
9	LI:228186.1:2001JAN12	666910H1	1716	1791
9	LI:228186.1:2001JAN12	3347266H1	2070	2332
9	LI:228186.1:2001JAN12	7733338J2	2100	2404
9	LI:228186.1:2001JAN12	1387055H1	2100	2221
9	LI:228186.1:2001JAN12	4434739H1	2100	2194

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
9	LI:228186.1:2001JAN12	7666362H1	2100	2267
9	LI:228186.1:2001JAN12	1316454F6	2100	2257
9	LI:228186.1:2001JAN12	1316454H1	2100	2216
9	LI:228186.1:2001JAN12	4226489H1	2150	2413
9	LI:228186.1:2001JAN12	2623306H1	2153	2414
9	LI:228186.1:2001JAN12	6023585H1	2170	2440
9	LI:228186.1:2001JAN12	7320012H1	2186	2709
9	LI:228186.1:2001JAN12	7734147J2	2209	2811
9	LI:228186.1:2001JAN12	4919037H2	2217	2496
9	LI:228186.1:2001JAN12	3328979H1	2257	2472
9	LI:228186.1:2001JAN12	1574559H1	2266	2489
9	LI:228186.1:2001JAN12	1574592H1	2266	2379
9	LI:228186.1:2001JAN12	1001336R1	2273	2792
9	LI:228186.1:2001JAN12	1001336H1	2273	2507
9	LI:228186.1:2001JAN12	8184932H1	2312	2938
9	LI:228186.1:2001JAN12	3698252H1	2331	2639
9	LI:228186.1:2001JAN12	793092H1	2338	2537
9	LI:228186.1:2001JAN12	8168102J1	2414	3052
9	LI:228186.1:2001JAN12	8168102H1	2416	3052
9	LI:228186.1:2001JAN12	70004803D1	2498	2711
9	LI:228186.1:2001JAN12	70008848D1	2510	2979
9	LI:228186.1:2001JAN12	70006448D1	2516	3099
9	LI:228186.1:2001JAN12	3491173F6	2516	3153
9	LI:228186.1:2001JAN12	70009419D1	2516	3026
9	LI:228186.1:2001JAN12	70008962D1	2516	3008
9	LI:228186.1:2001JAN12	70005299D1	2516	3103
9	LI:228186.1:2001JAN12	70002134D1	2516	2980
9	LI:228186.1:2001JAN12	70004120D1	2516	2878
9	LI:228186.1:2001JAN12	3491173H1	2517	2823
9	LI:228186.1:2001JAN12	7344433H1	2526	3086
9	LI:228186.1:2001JAN12	70010456D1	2546	2980
9	LI:228186.1:2001JAN12	2098590R6	2551	3125
9	LI:228186.1:2001JAN12	2098590H1	2551	2800
9	LI:228186.1:2001JAN12	5533049H1	2564	2758
9	LI:228186.1:2001JAN12	70004533D1	2577	3123
9	LI:228186.1:2001JAN12	70006324D1	2577	3103
9	LI:228186.1:2001JAN12	70011507D1	2577	3073
9	LI:228186.1:2001JAN12	70006718D1	2577	2971
9	LI:228186.1:2001JAN12	70007092D1	2577	2938
9	LI:228186.1:2001JAN12	7733338H2	2614	3174
9	LI:228186.1:2001JAN12	7124234H1	2603	3140
9	LI:228186.1:2001JAN12	70008418D1	2643	3221
9	LI:228186.1:2001JAN12	3491173T6	2667	3388
9	LI:228186.1:2001JAN12	70002534D1	2679	3210
9	LI:228186.1:2001JAN12	70005595D1	2679	3199
9	LI:228186.1:2001JAN12	70008578D1	2679	3161
9	LI:228186.1:2001JAN12	2889251H1	2682	2971
9	LI:228186.1:2001JAN12	70011779D1	2680	3073
9	LI:228186.1:2001JAN12	2889309F6	2682	3066

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
9	LI:228186.1:2001JAN12	2889309H1	2682	2983
9	LI:228186.1:2001JAN12	70006774D1	2712	3121
9	LI:228186.1:2001JAN12	70003888D1	2712	3320
9	LI:228186.1:2001JAN12	70006280D1	2712	3330
9	LI:228186.1:2001JAN12	70006292D1	2712	3222
9	LI:228186.1:2001JAN12	70001797D1	2712	3221
9	LI:228186.1:2001JAN12	70008495D1	2712	3177
9	LI:228186.1:2001JAN12	70001207D1	2712	3164
9	LI:228186.1:2001JAN12	70002332D1	2713	3315
9	LI:228186.1:2001JAN12	70007897D1	2713	3313
9	LI:228186.1:2001JAN12	70005965D1	2713	3221
9	LI:228186.1:2001JAN12	70006228D1	2713	3221
9	LI:228186.1:2001JAN12	70006597D1	2713	3141
9	LI:228186.1:2001JAN12	70002365D1	2736	3326
9	LI:228186.1:2001JAN12	3832785H1	2760	3069
9	LI:228186.1:2001JAN12	70005365D1	2824	3329
9	LI:228186.1:2001JAN12	3038130H1	2839	3096
9	LI:228186.1:2001JAN12	3038185H1	2839	3072
9	LI:228186.1:2001JAN12	2889309T6	2859	3026
9	LI:228186.1:2001JAN12	3493336T6	2904	3382
9	LI:228186.1:2001JAN12	70004085D1	2981	3222
9	LI:228186.1:2001JAN12	70002244D1	2982	3559
9	LI:228186.1:2001JAN12	70006170D1	2982	3561
9	LI:228186.1:2001JAN12	7453509H1	1	589
9	LI:228186.1:2001JAN12	706431H1	104	364
9	LI:228186.1:2001JAN12	552849R6	209	716
9	LI:228186.1:2001JAN12	552849H1	209	439
9	LI:228186.1:2001JAN12	2729487H1	294	539
9	LI:228186.1:2001JAN12	6913225J1	335	888
9	LI:228186.1:2001JAN12	g2153761	479	913
9	LI:228186.1:2001JAN12	7339459H1	537	1030
9	LI:228186.1:2001JAN12	1255495T6	565	1081
9	LI:228186.1:2001JAN12	1837462F6	635	1091
9	LI:228186.1:2001JAN12	1837462H1	636	890
9	LI:228186.1:2001JAN12	g4395197	729	1123
9	LI:228186.1:2001JAN12	3097532H1	802	1107
9	LI:228186.1:2001JAN12	g915974	1030	1354
9	LI:228186.1:2001JAN12	g1524460	1051	1237
9	LI:228186.1:2001JAN12	g2153706	1068	1440
9	LI:228186.1:2001JAN12	5711878H1	1110	1383
9	LI:228186.1:2001JAN12	1837462T6	1129	1755
9	LI:228186.1:2001JAN12	1544854R6	1167	1485
9	LI:228186.1:2001JAN12	1544854H1	1167	1353
9	LI:228186.1:2001JAN12	1544854T6	1192	1710
9	LI:228186.1:2001JAN12	552849T6	1198	1396
9	LI:228186.1:2001JAN12	g5664103	1290	1756
9	LI:228186.1:2001JAN12	g6196828	1332	1754
9	LI:228186.1:2001JAN12	g6401446	1354	1756
9	LI:228186.1:2001JAN12	g1523710	1390	1753

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
9	LI:228186.1:2001JAN12	g3329948	1498	1757
9	LI:228186.1:2001JAN12	g4222632	4725	5012
9	LI:228186.1:2001JAN12	g5232252	4725	4991
9	LI:228186.1:2001JAN12	g824804	4731	5011
9	LI:228186.1:2001JAN12	1357315F6	4732	5011
9	LI:228186.1:2001JAN12	1357315H1	4732	4988
9	LI:228186.1:2001JAN12	g671294	4768	4991
9	LI:228186.1:2001JAN12	g5633555	4804	4924
9	LI:228186.1:2001JAN12	g1241956	4868	5012
9	LI:228186.1:2001JAN12	3553562H1	3315	3591
9	LI:228186.1:2001JAN12	g574651	3356	3702
9	LI:228186.1:2001JAN12	g876929	3357	3678
9	LI:228186.1:2001JAN12	g772754	3371	3657
9	LI:228186.1:2001JAN12	g768508	3392	3762
9	LI:228186.1:2001JAN12	3557642H1	3395	3671
9	LI:228186.1:2001JAN12	3737557H1	3431	3741
9	LI:228186.1:2001JAN12	597044H1	3134	3375
9	LI:228186.1:2001JAN12	5393122H1	3142	3403
9	LI:228186.1:2001JAN12	4068833H1	3142	3409
9	LI:228186.1:2001JAN12	5580464H1	3153	3393
9	LI:228186.1:2001JAN12	4238877H1	3154	3433
9	LI:228186.1:2001JAN12	1572292F6	3159	3595
9	LI:228186.1:2001JAN12	1572292H1	3159	3357
9	LI:228186.1:2001JAN12	1232738H1	3162	3399
9	LI:228186.1:2001JAN12	4857088H1	3223	3480
9	LI:228186.1:2001JAN12	4273286H1	3255	3535
9	LI:228186.1:2001JAN12	3449302H1	3285	3541
9	LI:228186.1:2001JAN12	5608885H1	3309	3571
9	LI:228186.1:2001JAN12	5607886H1	3309	3551
10	LI:721233.1:2001JAN12	6271332H2	1	571
10	LI:721233.1:2001JAN12	6271332F8	16	652
10	LI:721233.1:2001JAN12	6271332T8	59	643
11	LI:291759.2:2001JAN12	g1210479	114	173
11	LI:291759.2:2001JAN12	g835196	114	178
11	LI:291759.2:2001JAN12	5773096H1	117	534
11	LI:291759.2:2001JAN12	3506266H1	118	405
11	LI:291759.2:2001JAN12	3678854H1	119	196
11	LI:291759.2:2001JAN12	g1314909	125	572
11	LI:291759.2:2001JAN12	309322H1	131	370
11	LI:291759.2:2001JAN12	6456256H1	155	653
11	LI:291759.2:2001JAN12	6456209H1	159	653
11	LI:291759.2:2001JAN12	6456309H1	183	632
11	LI:291759.2:2001JAN12	917190H1	220	551
11	LI:291759.2:2001JAN12	g1753322	250	327
11	LI:291759.2:2001JAN12	2654790T6	277	874
11	LI:291759.2:2001JAN12	4298445H1	291	560
11	LI:291759.2:2001JAN12	7733027H2	552	1131
11	LI:291759.2:2001JAN12	7110866H1	567	654
11	LI:291759.2:2001JAN12	2936830H1	632	906

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
11	LI:291759.2:2001JAN12	2611540H1	626	680
11	LI:291759.2:2001JAN12	4636570H1	637	891
11	LI:291759.2:2001JAN12	2994056H1	642	920
11	LI:291759.2:2001JAN12	g7043884	652	927
11	LI:291759.2:2001JAN12	g1189956	635	905
11	LI:291759.2:2001JAN12	g3422670	638	904
11	LI:291759.2:2001JAN12	1961123T6	639	869
11	LI:291759.2:2001JAN12	g7318146	646	910
11	LI:291759.2:2001JAN12	2736026T6	646	868
11	LI:291759.2:2001JAN12	g3095265	647	910
11	LI:291759.2:2001JAN12	5759842H1	647	710
11	LI:291759.2:2001JAN12	g1379309	648	910
11	LI:291759.2:2001JAN12	g2278758	648	910
11	LI:291759.2:2001JAN12	1371310H1	649	805
11	LI:291759.2:2001JAN12	g5671213	584	840
11	LI:291759.2:2001JAN12	g2741292	587	846
11	LI:291759.2:2001JAN12	g4988210	587	841
11	LI:291759.2:2001JAN12	g1817486	587	842
11	LI:291759.2:2001JAN12	g7150329	587	837
11	LI:291759.2:2001JAN12	g4998453	587	837
11	LI:291759.2:2001JAN12	g1313377	587	837
11	LI:291759.2:2001JAN12	g1192583	587	837
11	LI:291759.2:2001JAN12	1508944F6	749	1002
11	LI:291759.2:2001JAN12	1508944T6	587	823
11	LI:291759.2:2001JAN12	2738251T6	587	808
11	LI:291759.2:2001JAN12	2519685H1	587	748
11	LI:291759.2:2001JAN12	2860383H1	587	741
11	LI:291759.2:2001JAN12	g5447043	587	840
11	LI:291759.2:2001JAN12	g1379308	587	673
11	LI:291759.2:2001JAN12	6220828H1	587	671
11	LI:291759.2:2001JAN12	1508944H1	587	660
11	LI:291759.2:2001JAN12	g1190150	588	844
11	LI:291759.2:2001JAN12	g1753384	588	839
11	LI:291759.2:2001JAN12	g5741046	587	840
11	LI:291759.2:2001JAN12	g6133239	588	841
11	LI:291759.2:2001JAN12	4533410T1	588	801
11	LI:291759.2:2001JAN12	4533410H1	588	680
11	LI:291759.2:2001JAN12	3809304H1	588	682
11	LI:291759.2:2001JAN12	4128541H1	588	666
11	LI:291759.2:2001JAN12	g4088358	611	866
11	LI:291759.2:2001JAN12	4502947H1	5	255
11	LI:291759.2:2001JAN12	1894293H1	1	203
11	LI:291759.2:2001JAN12	g4124249	1	204
11	LI:291759.2:2001JAN12	1475188H1	1	189
11	LI:291759.2:2001JAN12	1475188T1	1	150
11	LI:291759.2:2001JAN12	1681732F6	814	1007
11	LI:291759.2:2001JAN12	1681732H1	814	1009
11	LI:291759.2:2001JAN12	1681732F7	814	1007
11	LI:291759.2:2001JAN12	910870H1	13	201

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
11	LI:291759.2:2001JAN12	1681732T7	14	165
11	LI:291759.2:2001JAN12	1681732T6	14	164
11	LI:291759.2:2001JAN12	g2022753	12	197
11	LI:291759.2:2001JAN12	2413084H1	832	1002
11	LI:291759.2:2001JAN12	6883666J1	779	1172
11	LI:291759.2:2001JAN12	1927072H1	1	54
11	LI:291759.2:2001JAN12	g4217544	1	54
11	LI:291759.2:2001JAN12	g1981790	867	1155
11	LI:291759.2:2001JAN12	5298489H1	1	54
11	LI:291759.2:2001JAN12	2671094F6	924	1167
11	LI:291759.2:2001JAN12	2671094T6	924	1438
11	LI:291759.2:2001JAN12	2671094H1	924	1165
11	LI:291759.2:2001JAN12	g1995827	941	1027
11	LI:291759.2:2001JAN12	2736026F6	941	1237
11	LI:291759.2:2001JAN12	2736026H1	941	1070
11	LI:291759.2:2001JAN12	5476134H1	961	1178
11	LI:291759.2:2001JAN12	5477477H1	961	1178
11	LI:291759.2:2001JAN12	5479864H1	961	1229
11	LI:291759.2:2001JAN12	5478264H1	961	1110
11	LI:291759.2:2001JAN12	4692078H1	973	1129
11	LI:291759.2:2001JAN12	g1186868	1013	1173
11	LI:291759.2:2001JAN12	g1186747	1013	1188
11	LI:291759.2:2001JAN12	5103848H1	1029	1245
11	LI:291759.2:2001JAN12	4772463H1	1052	1246
11	LI:291759.2:2001JAN12	1961123H1	1066	1246
11	LI:291759.2:2001JAN12	1961123R6	1066	1246
11	LI:291759.2:2001JAN12	6180072H1	351	643
11	LI:291759.2:2001JAN12	2738251F6	409	936
11	LI:291759.2:2001JAN12	2738251H1	409	674
11	LI:291759.2:2001JAN12	g1860299	413	683
11	LI:291759.2:2001JAN12	3352689H1	421	613
11	LI:291759.2:2001JAN12	g3280105	448	920
11	LI:291759.2:2001JAN12	g5636736	448	915
11	LI:291759.2:2001JAN12	g1243075	450	672
11	LI:291759.2:2001JAN12	2681533H1	433	723
11	LI:291759.2:2001JAN12	g4175465	440	886
11	LI:291759.2:2001JAN12	515771H1	531	669
11	LI:291759.2:2001JAN12	g1997928	1	269
11	LI:291759.2:2001JAN12	7733027J2	16	661
11	LI:291759.2:2001JAN12	g835195	67	392
11	LI:291759.2:2001JAN12	g856172	107	392
11	LI:291759.2:2001JAN12	2654790F6	114	520
11	LI:291759.2:2001JAN12	6883666H1	114	462
11	LI:291759.2:2001JAN12	7597338H1	114	459
11	LI:291759.2:2001JAN12	8194536J1	114	412
11	LI:291759.2:2001JAN12	2328960R6	114	330
11	LI:291759.2:2001JAN12	2654790H1	114	291
11	LI:291759.2:2001JAN12	2328960H1	114	246
11	LI:291759.2:2001JAN12	4996248H1	114	217

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
11	LI:291759.2:2001JAN12	5610314H1	114	211
11	LI:291759.2:2001JAN12	g856075	114	206
11	LI:291759.2:2001JAN12	7982183H1	1103	1246
11	LI:291759.2:2001JAN12	3475555H1	1116	1270
11	LI:291759.2:2001JAN12	291454H1	1128	1246
11	LI:291759.2:2001JAN12	2009374H1	1168	1246
12	LI:292613.17:2001JAN12	994833R6	1	309
12	LI:292613.17:2001JAN12	994833H1	1	124
12	LI:292613.17:2001JAN12	994833T6	1	363
12	LI:292613.17:2001JAN12	4149665F6	1	355
12	LI:292613.17:2001JAN12	4149665H1	1	228
12	LI:292613.17:2001JAN12	1507329H1	46	170
12	LI:292613.17:2001JAN12	3144082H1	62	276
12	LI:292613.17:2001JAN12	3143359H1	62	224
12	LI:292613.17:2001JAN12	4851779H1	249	508
13	LI:412959.15:2001JAN12	2674048F6	1	330
13	LI:412959.15:2001JAN12	2674048H1	1	211
13	LI:412959.15:2001JAN12	2330307R6	29	493
13	LI:412959.15:2001JAN12	2330307H1	29	304
13	LI:412959.15:2001JAN12	1739552H1	29	95
13	LI:412959.15:2001JAN12	2550691H1	49	290
13	LI:412959.15:2001JAN12	5205237H2	113	370
13	LI:412959.15:2001JAN12	5205237F6	113	406
13	LI:412959.15:2001JAN12	5799259H1	178	406
13	LI:412959.15:2001JAN12	5646172H1	199	293
13	LI:412959.15:2001JAN12	955847H1	325	563
14	LI:482512.3:2001JAN12	g873524	2221	2415
14	LI:482512.3:2001JAN12	g4328019	2156	2401
14	LI:482512.3:2001JAN12	5835727H1	2100	2384
14	LI:482512.3:2001JAN12	g3835121	2159	2400
14	LI:482512.3:2001JAN12	809937R1	2105	2405
14	LI:482512.3:2001JAN12	809937T1	2105	2362
14	LI:482512.3:2001JAN12	809937H1	2105	2397
14	LI:482512.3:2001JAN12	g3736000	2108	2405
14	LI:482512.3:2001JAN12	1753767H1	2110	2351
14	LI:482512.3:2001JAN12	1754121H1	2110	2351
14	LI:482512.3:2001JAN12	2371576H1	1856	2086
14	LI:482512.3:2001JAN12	1496803H1	1856	2073
14	LI:482512.3:2001JAN12	4530169H1	1869	2129
14	LI:482512.3:2001JAN12	g2115734	1879	2387
14	LI:482512.3:2001JAN12	8262183J1	1887	2385
14	LI:482512.3:2001JAN12	g2556760	1904	2402
14	LI:482512.3:2001JAN12	g3245066	1905	2405
14	LI:482512.3:2001JAN12	2457752T6	1904	2360
14	LI:482512.3:2001JAN12	g2553409	1907	2401
14	LI:482512.3:2001JAN12	g1718873	1908	2227
14	LI:482512.3:2001JAN12	g1860643	1908	2281
14	LI:482512.3:2001JAN12	g4524169	1915	2400
14	LI:482512.3:2001JAN12	g2115481	1917	2410

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
14	LI:482512.3:2001JAN12	g3109337	1918	2409
14	LI:482512.3:2001JAN12	g3433865	1925	2402
14	LI:482512.3:2001JAN12	g4196841	1941	2402
14	LI:482512.3:2001JAN12	g4189929	1948	2401
14	LI:482512.3:2001JAN12	g3308018	1952	2405
14	LI:482512.3:2001JAN12	g6131965	1952	2407
14	LI:482512.3:2001JAN12	g4372573	1952	2400
14	LI:482512.3:2001JAN12	6203722H2	1953	2400
14	LI:482512.3:2001JAN12	g6131971	1956	2407
14	LI:482512.3:2001JAN12	g1138274	1966	2400
14	LI:482512.3:2001JAN12	g5632175	1965	2400
14	LI:482512.3:2001JAN12	3602394H1	1965	2250
14	LI:482512.3:2001JAN12	5755635H1	1817	1901
14	LI:482512.3:2001JAN12	5314801H1	1827	2078
14	LI:482512.3:2001JAN12	5314701H1	1827	1985
14	LI:482512.3:2001JAN12	5585639H1	1828	2052
14	LI:482512.3:2001JAN12	5661181H1	1848	2086
14	LI:482512.3:2001JAN12	002115H1	1851	2306
14	LI:482512.3:2001JAN12	3784573H1	1853	2168
14	LI:482512.3:2001JAN12	873570H1	2261	2405
14	LI:482512.3:2001JAN12	4542494H1	2311	2405
14	LI:482512.3:2001JAN12	3075723H1	2326	2400
14	LI:482512.3:2001JAN12	940889H1	2348	2405
14	LI:482512.3:2001JAN12	1380644H1	2019	2283
14	LI:482512.3:2001JAN12	g1148949	2016	2400
14	LI:482512.3:2001JAN12	g1118371	2018	2402
14	LI:482512.3:2001JAN12	1380645H1	2019	2281
14	LI:482512.3:2001JAN12	1384594H1	2019	2260
14	LI:482512.3:2001JAN12	g1421883	2020	2405
14	LI:482512.3:2001JAN12	g1664147	2021	2401
14	LI:482512.3:2001JAN12	945748H1	2023	2185
14	LI:482512.3:2001JAN12	3839205H1	2024	2339
14	LI:482512.3:2001JAN12	g3178370	2026	2411
14	LI:482512.3:2001JAN12	g1398466	1981	2404
14	LI:482512.3:2001JAN12	5663784H1	1984	2274
14	LI:482512.3:2001JAN12	g2618247	1995	2401
14	LI:482512.3:2001JAN12	g2834644	1995	2401
14	LI:482512.3:2001JAN12	g1754374	1996	2404
14	LI:482512.3:2001JAN12	g3246099	1999	2410
14	LI:482512.3:2001JAN12	g4107748	2000	2401
14	LI:482512.3:2001JAN12	g1718874	2002	2402
14	LI:482512.3:2001JAN12	g1861028	2004	2402
14	LI:482512.3:2001JAN12	g1955011	2009	2378
14	LI:482512.3:2001JAN12	2017265H1	2015	2160
14	LI:482512.3:2001JAN12	g927843	1487	1645
14	LI:482512.3:2001JAN12	3944613H1	1490	1645
14	LI:482512.3:2001JAN12	g1057615	1490	1632
14	LI:482512.3:2001JAN12	g711667	1496	1653
14	LI:482512.3:2001JAN12	g763648	1497	1598

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
14	LI:482512.3:2001JAN12	5699665H1	1500	1675
14	LI:482512.3:2001JAN12	g2714398	1504	1653
14	LI:482512.3:2001JAN12	g668934	1505	1598
14	LI:482512.3:2001JAN12	2456911H1	1531	1598
14	LI:482512.3:2001JAN12	g3146519	1534	1598
14	LI:482512.3:2001JAN12	g709509	1536	1598
14	LI:482512.3:2001JAN12	1384064H1	1579	1645
14	LI:482512.3:2001JAN12	6559028H1	1813	2383
14	LI:482512.3:2001JAN12	g1146774	1812	2174
14	LI:482512.3:2001JAN12	1518980T7	1816	2309
14	LI:482512.3:2001JAN12	6949010H1	1817	2288
14	LI:482512.3:2001JAN12	2325041H1	1817	1948
14	LI:482512.3:2001JAN12	5755636H1	1816	2045
14	LI:482512.3:2001JAN12	1855715F6	1817	2110
14	LI:482512.3:2001JAN12	5263754H1	1817	2051
14	LI:482512.3:2001JAN12	1855715H1	1817	1879
14	LI:482512.3:2001JAN12	g3277379	1429	1598
14	LI:482512.3:2001JAN12	6948396H1	1433	1566
14	LI:482512.3:2001JAN12	g2754313	1438	1598
14	LI:482512.3:2001JAN12	g3659102	1441	1653
14	LI:482512.3:2001JAN12	2544736H1	1441	1639
14	LI:482512.3:2001JAN12	2761382H1	1442	1667
14	LI:482512.3:2001JAN12	g2714655	1441	1645
14	LI:482512.3:2001JAN12	g3802581	1446	1631
14	LI:482512.3:2001JAN12	1991282H1	1447	1639
14	LI:482512.3:2001JAN12	g985287	1447	1598
14	LI:482512.3:2001JAN12	6700167H1	1451	1892
14	LI:482512.3:2001JAN12	6558151H1	1453	1975
14	LI:482512.3:2001JAN12	g1042434	1452	1598
14	LI:482512.3:2001JAN12	g747038	1457	1645
14	LI:482512.3:2001JAN12	4638167H1	1462	1644
14	LI:482512.3:2001JAN12	3810276H1	1480	1598
14	LI:482512.3:2001JAN12	g1383051	1485	1645
14	LI:482512.3:2001JAN12	g2713364	1484	1613
14	LI:482512.3:2001JAN12	g2593948	2164	2327
14	LI:482512.3:2001JAN12	g1625916	1980	2401
14	LI:482512.3:2001JAN12	g2742370	2191	2405
14	LI:482512.3:2001JAN12	2503846H1	2201	2400
14	LI:482512.3:2001JAN12	g1550293	938	1029
14	LI:482512.3:2001JAN12	g873523	940	1267
14	LI:482512.3:2001JAN12	g875484	940	1278
14	LI:482512.3:2001JAN12	3140312H1	940	1217
14	LI:482512.3:2001JAN12	046678H1	962	1243
14	LI:482512.3:2001JAN12	043864H1	963	1277
14	LI:482512.3:2001JAN12	1916774H1	974	1277
14	LI:482512.3:2001JAN12	g1392105	980	1489
14	LI:482512.3:2001JAN12	g1685835	982	1387
14	LI:482512.3:2001JAN12	4155543H1	1006	1254
14	LI:482512.3:2001JAN12	6951737H1	1007	1244

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
14	LI:482512.3:2001JAN12	3844826H1	1014	1320
14	LI:482512.3:2001JAN12	3257104H1	1036	1316
14	LI:482512.3:2001JAN12	3979735H1	1047	1351
14	LI:482512.3:2001JAN12	5068828H1	1048	1348
14	LI:482512.3:2001JAN12	g675099	1061	1479
14	LI:482512.3:2001JAN12	g706514	1061	1458
14	LI:482512.3:2001JAN12	2185344H1	1075	1386
14	LI:482512.3:2001JAN12	589365H1	1075	1335
14	LI:482512.3:2001JAN12	5031411H1	1076	1375
14	LI:482512.3:2001JAN12	4087425H1	1086	1394
14	LI:482512.3:2001JAN12	g2433835	1102	1526
14	LI:482512.3:2001JAN12	7244978H1	1115	1673
14	LI:482512.3:2001JAN12	045891H1	1119	1388
14	LI:482512.3:2001JAN12	5260860H1	1119	1369
14	LI:482512.3:2001JAN12	1305950T6	1120	1631
14	LI:482512.3:2001JAN12	4624991H1	1121	1390
14	LI:482512.3:2001JAN12	3516303H1	1125	1398
14	LI:482512.3:2001JAN12	306079H1	1139	1363
14	LI:482512.3:2001JAN12	307499H1	1140	1524
14	LI:482512.3:2001JAN12	g5110580	1143	1515
14	LI:482512.3:2001JAN12	5962610H1	1170	1657
14	LI:482512.3:2001JAN12	7232448H1	1168	1598
14	LI:482512.3:2001JAN12	5974019H1	1189	1645
14	LI:482512.3:2001JAN12	4626361H1	1189	1460
14	LI:482512.3:2001JAN12	4637075H1	1195	1460
14	LI:482512.3:2001JAN12	6977977H1	1214	1632
14	LI:482512.3:2001JAN12	6726370H1	1215	1598
14	LI:482512.3:2001JAN12	6820986H1	1223	1598
14	LI:482512.3:2001JAN12	2182014H1	1230	1517
14	LI:482512.3:2001JAN12	6559637H1	1248	1598
14	LI:482512.3:2001JAN12	4974150H1	1257	1548
14	LI:482512.3:2001JAN12	1384882H1	1266	1480
14	LI:482512.3:2001JAN12	4109127H1	1282	1467
14	LI:482512.3:2001JAN12	3905520H1	1287	1479
14	LI:482512.3:2001JAN12	1296488F1	1293	1598
14	LI:482512.3:2001JAN12	1296488H1	1293	1520
14	LI:482512.3:2001JAN12	2841257H1	1304	1576
14	LI:482512.3:2001JAN12	1257539H1	1313	1468
14	LI:482512.3:2001JAN12	g2837530	1324	1598
14	LI:482512.3:2001JAN12	g1576401	1326	1645
14	LI:482512.3:2001JAN12	g2018016	1330	1631
14	LI:482512.3:2001JAN12	g4389755	1332	1598
14	LI:482512.3:2001JAN12	2364653H1	1341	1591
14	LI:482512.3:2001JAN12	2825595H1	1341	1561
14	LI:482512.3:2001JAN12	g1550340	1360	1598
14	LI:482512.3:2001JAN12	g2556753	1368	1653
14	LI:482512.3:2001JAN12	g3425443	1377	1598
14	LI:482512.3:2001JAN12	g1392159	1377	1598
14	LI:482512.3:2001JAN12	4638729H1	1388	1650

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
14	LI:482512.3:2001JAN12	2707566H1	1395	1661
14	LI:482512.3:2001JAN12	1990815T6	1395	1631
14	LI:482512.3:2001JAN12	4182102H1	1399	1639
14	LI:482512.3:2001JAN12	g1736048	1401	1598
14	LI:482512.3:2001JAN12	3414387H1	1405	1638
14	LI:482512.3:2001JAN12	3618923H1	1407	1686
14	LI:482512.3:2001JAN12	g1550465	1407	1644
14	LI:482512.3:2001JAN12	3618907H1	1406	1639
14	LI:482512.3:2001JAN12	g2219112	1408	1598
14	LI:482512.3:2001JAN12	g880239	1420	1598
14	LI:482512.3:2001JAN12	g717966	1426	1645
14	LI:482512.3:2001JAN12	4557378H1	1424	1639
14	LI:482512.3:2001JAN12	g3277736	1427	1515
14	LI:482512.3:2001JAN12	g991594	1428	1646
14	LI:482512.3:2001JAN12	g696806	828	1200
14	LI:482512.3:2001JAN12	7333420H1	842	1480
14	LI:482512.3:2001JAN12	6173218H1	845	1162
14	LI:482512.3:2001JAN12	g1151824	849	1344
14	LI:482512.3:2001JAN12	2400804H1	861	1113
14	LI:482512.3:2001JAN12	g763702	873	1148
14	LI:482512.3:2001JAN12	1894128H1	877	1121
14	LI:482512.3:2001JAN12	2401675H1	877	1118
14	LI:482512.3:2001JAN12	4718965H1	885	1163
14	LI:482512.3:2001JAN12	g1550279	903	1047
14	LI:482512.3:2001JAN12	085340H1	926	1215
14	LI:482512.3:2001JAN12	g1025090	2171	2399
14	LI:482512.3:2001JAN12	g690874	2166	2399
14	LI:482512.3:2001JAN12	g2277764	2205	2405
14	LI:482512.3:2001JAN12	5187711H1	2173	2407
14	LI:482512.3:2001JAN12	g690873	2174	2401
14	LI:482512.3:2001JAN12	g3329866	2177	2372
14	LI:482512.3:2001JAN12	5371978H1	798	1032
14	LI:482512.3:2001JAN12	g1057614	801	1183
14	LI:482512.3:2001JAN12	5302479H1	806	1041
14	LI:482512.3:2001JAN12	g985513	802	1126
14	LI:482512.3:2001JAN12	g1472689	802	1029
14	LI:482512.3:2001JAN12	g1966605	806	1072
14	LI:482512.3:2001JAN12	046056H1	815	1121
14	LI:482512.3:2001JAN12	2050472H1	816	1089
14	LI:482512.3:2001JAN12	4530227H1	818	1047
14	LI:482512.3:2001JAN12	6557789H1	817	1438
14	LI:482512.3:2001JAN12	g711812	825	1048
14	LI:482512.3:2001JAN12	g927924	825	1154
14	LI:482512.3:2001JAN12	g747138	825	1091
14	LI:482512.3:2001JAN12	2230315H1	27	308
14	LI:482512.3:2001JAN12	8175222H1	31	482
14	LI:482512.3:2001JAN12	5014968H1	31	273
14	LI:482512.3:2001JAN12	g880294	31	322
14	LI:482512.3:2001JAN12	g710258	31	263

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
14	LI:482512.3:2001JAN12	6913395J1	30	124
14	LI:482512.3:2001JAN12	g2661035	31	1598
14	LI:482512.3:2001JAN12	2457752F6	31	426
14	LI:482512.3:2001JAN12	1804835F6	31	350
14	LI:482512.3:2001JAN12	g764891	31	309
14	LI:482512.3:2001JAN12	2367452H1	31	253
14	LI:482512.3:2001JAN12	2214947H1	31	237
14	LI:482512.3:2001JAN12	1804835H1	31	226
14	LI:482512.3:2001JAN12	g672934	31	231
14	LI:482512.3:2001JAN12	3759832H1	31	218
14	LI:482512.3:2001JAN12	2457752H1	31	170
14	LI:482512.3:2001JAN12	g669457	31	132
14	LI:482512.3:2001JAN12	1321111H1	45	298
14	LI:482512.3:2001JAN12	046743H1	48	346
14	LI:482512.3:2001JAN12	2958213H1	53	172
14	LI:482512.3:2001JAN12	041586H1	57	372
14	LI:482512.3:2001JAN12	g1995825	62	359
14	LI:482512.3:2001JAN12	021288H1	71	355
14	LI:482512.3:2001JAN12	023125H1	70	290
14	LI:482512.3:2001JAN12	020669H1	71	391
14	LI:482512.3:2001JAN12	023365H1	71	400
14	LI:482512.3:2001JAN12	023083H1	71	261
14	LI:482512.3:2001JAN12	046013H1	71	350
14	LI:482512.3:2001JAN12	045282H1	75	443
14	LI:482512.3:2001JAN12	023015H1	71	284
14	LI:482512.3:2001JAN12	g2219111	80	206
14	LI:482512.3:2001JAN12	5057178H1	120	394
14	LI:482512.3:2001JAN12	6505740H1	159	729
14	LI:482512.3:2001JAN12	4530837H1	157	440
14	LI:482512.3:2001JAN12	4365205H1	191	480
14	LI:482512.3:2001JAN12	g6837967	196	686
14	LI:482512.3:2001JAN12	4979543H1	198	487
14	LI:482512.3:2001JAN12	532837H1	198	319
14	LI:482512.3:2001JAN12	g4891444	219	682
14	LI:482512.3:2001JAN12	3386615H1	362	518
14	LI:482512.3:2001JAN12	1990815H1	368	542
14	LI:482512.3:2001JAN12	1305950F6	404	872
14	LI:482512.3:2001JAN12	1305950H1	404	642
14	LI:482512.3:2001JAN12	3783350H1	408	691
14	LI:482512.3:2001JAN12	2962868H1	424	726
14	LI:482512.3:2001JAN12	4528095H1	453	714
14	LI:482512.3:2001JAN12	8187102H1	454	1037
14	LI:482512.3:2001JAN12	1855017H1	492	783
14	LI:482512.3:2001JAN12	g1576448	508	845
14	LI:482512.3:2001JAN12	g1471254	548	916
14	LI:482512.3:2001JAN12	045976H1	551	787
14	LI:482512.3:2001JAN12	6134930H1	577	911
14	LI:482512.3:2001JAN12	4972696H1	577	871
14	LI:482512.3:2001JAN12	g1959676	581	1009

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
14	LI:482512.3:2001JAN12	5743902H1	582	663
14	LI:482512.3:2001JAN12	491086H1	591	950
14	LI:482512.3:2001JAN12	6913395H1	613	1070
14	LI:482512.3:2001JAN12	4821459H1	603	905
14	LI:482512.3:2001JAN12	3323541H2	605	832
14	LI:482512.3:2001JAN12	g1626259	616	998
14	LI:482512.3:2001JAN12	g1024977	614	964
14	LI:482512.3:2001JAN12	2111581H1	614	880
14	LI:482512.3:2001JAN12	g1626020	616	1009
14	LI:482512.3:2001JAN12	g2026440	625	937
14	LI:482512.3:2001JAN12	5680821H1	636	926
14	LI:482512.3:2001JAN12	6909290H1	644	1232
14	LI:482512.3:2001JAN12	4595758H1	685	964
14	LI:482512.3:2001JAN12	4313975H1	687	975
14	LI:482512.3:2001JAN12	4960424H1	690	982
14	LI:482512.3:2001JAN12	4784119H1	691	946
14	LI:482512.3:2001JAN12	6743028H1	692	1235
14	LI:482512.3:2001JAN12	g1157878	704	1025
14	LI:482512.3:2001JAN12	2559233H1	722	1003
14	LI:482512.3:2001JAN12	g1971698	728	1051
14	LI:482512.3:2001JAN12	5390379H1	731	1017
14	LI:482512.3:2001JAN12	3515683H1	733	970
14	LI:482512.3:2001JAN12	1870164H1	738	1028
14	LI:482512.3:2001JAN12	1871314H1	738	1038
14	LI:482512.3:2001JAN12	g1386366	743	1241
14	LI:482512.3:2001JAN12	2459470H1	760	983
14	LI:482512.3:2001JAN12	5685572H1	775	1050
14	LI:482512.3:2001JAN12	6916088H1	784	1431
14	LI:482512.3:2001JAN12	g718055	789	1198
14	LI:482512.3:2001JAN12	7346763H1	2032	2417
14	LI:482512.3:2001JAN12	g1626212	2033	2400
14	LI:482512.3:2001JAN12	1855715T6	2036	2356
14	LI:482512.3:2001JAN12	g3835444	2041	2403
14	LI:482512.3:2001JAN12	466696H1	2057	2289
14	LI:482512.3:2001JAN12	g5864949	2065	2400
14	LI:482512.3:2001JAN12	g875485	2073	2414
14	LI:482512.3:2001JAN12	2301339H1	2075	2327
14	LI:482512.3:2001JAN12	g674340	2080	2407
14	LI:482512.3:2001JAN12	g682338	2092	2400
14	LI:482512.3:2001JAN12	g1140444	2095	2407
14	LI:482512.3:2001JAN12	g6196222	2098	2401
14	LI:482512.3:2001JAN12	g1685729	2098	2405
14	LI:482512.3:2001JAN12	g5638155	2099	2400
14	LI:482512.3:2001JAN12	g4268508	2099	2400
14	LI:482512.3:2001JAN12	g4006452	2101	2405
14	LI:482512.3:2001JAN12	g3330360	2225	2400
14	LI:482512.3:2001JAN12	2009751H1	2234	2400
14	LI:482512.3:2001JAN12	g1136823	2227	2400
14	LI:482512.3:2001JAN12	g2195197	2256	2405

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
14	LI:482512.3:2001JAN12	873570T1	2260	2368
14	LI:482512.3:2001JAN12	6815272J1	1	297
14	LI:482512.3:2001JAN12	6815272R8	1	290
14	LI:482512.3:2001JAN12	g981955	1	298
14	LI:482512.3:2001JAN12	6549283H1	17	572
14	LI:482512.3:2001JAN12	7623377H1	24	642
14	LI:482512.3:2001JAN12	g2009082	25	326
14	LI:482512.3:2001JAN12	1949217H1	25	289
15	LI:413231.6:2001JAN12	2424460H1	1	199
15	LI:413231.6:2001JAN12	1706344F6	1	569
15	LI:413231.6:2001JAN12	1706344H1	1	233
15	LI:413231.6:2001JAN12	7337667H1	162	796
15	LI:413231.6:2001JAN12	1237075H1	408	662
15	LI:413231.6:2001JAN12	8271572T1	472	811
15	LI:413231.6:2001JAN12	1706344T6	503	954
15	LI:413231.6:2001JAN12	g7276320	701	996
16	LI:203383.1:2001JAN12	g2819701	975	1227
16	LI:203383.1:2001JAN12	5323709T6	800	1208
16	LI:203383.1:2001JAN12	5323709F6	629	1116
16	LI:203383.1:2001JAN12	6537415H1	479	1062
16	LI:203383.1:2001JAN12	2158630H1	828	1053
16	LI:203383.1:2001JAN12	5711628H1	749	1026
16	LI:203383.1:2001JAN12	1296562H1	740	959
16	LI:203383.1:2001JAN12	5483082H1	629	909
16	LI:203383.1:2001JAN12	5477880H1	629	893
16	LI:203383.1:2001JAN12	5323709H1	629	890
16	LI:203383.1:2001JAN12	5322729H1	629	879
16	LI:203383.1:2001JAN12	6214988H1	1	561
16	LI:203383.1:2001JAN12	g2902159	834	1228
16	LI:203383.1:2001JAN12	g7281445	1036	1228
16	LI:203383.1:2001JAN12	g2000936	950	1228
16	LI:203383.1:2001JAN12	g4188363	859	1228
16	LI:203383.1:2001JAN12	g2819715	965	1242
16	LI:203383.1:2001JAN12	g4244517	914	1234
16	LI:203383.1:2001JAN12	g4738989	964	1234
16	LI:203383.1:2001JAN12	g5878892	763	1233
16	LI:203383.1:2001JAN12	g2732240	764	1232
17	LI:133186.4:2001JAN12	7688030J1	1	577
17	LI:133186.4:2001JAN12	7581594H1	98	577
17	LI:133186.4:2001JAN12	7956839H1	111	577
17	LI:133186.4:2001JAN12	71603710V1	98	543
18	LI:238576.2:2001JAN12	4382965H1	346	613
18	LI:238576.2:2001JAN12	g1983225	349	712
18	LI:238576.2:2001JAN12	6099077H1	259	387
18	LI:238576.2:2001JAN12	6564603H1	264	850
18	LI:238576.2:2001JAN12	6140937H1	261	498
18	LI:238576.2:2001JAN12	7053558H1	264	904
18	LI:238576.2:2001JAN12	7001622H1	263	771
18	LI:238576.2:2001JAN12	6137522H1	265	558

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
18	LI:238576.2:2001JAN12	71300749V1	280	946
18	LI:238576.2:2001JAN12	4637090H1	296	554
18	LI:238576.2:2001JAN12	6059510H1	307	878
18	LI:238576.2:2001JAN12	6424708H1	307	865
18	LI:238576.2:2001JAN12	4943507H1	307	603
18	LI:238576.2:2001JAN12	5107771H1	308	557
18	LI:238576.2:2001JAN12	6858201H1	316	637
18	LI:238576.2:2001JAN12	5574827H1	324	593
18	LI:238576.2:2001JAN12	5292641H2	332	511
18	LI:238576.2:2001JAN12	7351314H1	334	785
18	LI:238576.2:2001JAN12	3126908H1	334	622
18	LI:238576.2:2001JAN12	2913933H1	334	609
18	LI:238576.2:2001JAN12	4530958H1	338	626
18	LI:238576.2:2001JAN12	595195H1	337	535
18	LI:238576.2:2001JAN12	7272621H1	338	863
18	LI:238576.2:2001JAN12	2899931H1	346	652
18	LI:238576.2:2001JAN12	6120217H1	260	838
18	LI:238576.2:2001JAN12	5118272H1	259	532
18	LI:238576.2:2001JAN12	3984701H1	186	494
18	LI:238576.2:2001JAN12	3642338H1	184	497
18	LI:238576.2:2001JAN12	3209133H1	184	419
18	LI:238576.2:2001JAN12	3384510H1	185	454
18	LI:238576.2:2001JAN12	2690213H1	185	444
18	LI:238576.2:2001JAN12	5338826H1	185	293
18	LI:238576.2:2001JAN12	7231614H1	186	732
18	LI:238576.2:2001JAN12	5076156H1	189	466
18	LI:238576.2:2001JAN12	5265030H1	192	453
18	LI:238576.2:2001JAN12	5351009H1	190	298
18	LI:238576.2:2001JAN12	4056963H1	190	509
18	LI:238576.2:2001JAN12	3128195H1	190	484
18	LI:238576.2:2001JAN12	2562930H2	190	453
18	LI:238576.2:2001JAN12	1581592H1	190	394
18	LI:238576.2:2001JAN12	100567H1	190	409
18	LI:238576.2:2001JAN12	71152815V1	185	850
18	LI:238576.2:2001JAN12	3416969H1	192	455
18	LI:238576.2:2001JAN12	974491H1	194	352
18	LI:238576.2:2001JAN12	6126528H1	228	544
18	LI:238576.2:2001JAN12	7027657H1	198	632
18	LI:238576.2:2001JAN12	2198232H1	199	464
18	LI:238576.2:2001JAN12	6168044H1	199	321
18	LI:238576.2:2001JAN12	4563346H1	199	453
18	LI:238576.2:2001JAN12	6118740F8	213	832
18	LI:238576.2:2001JAN12	265346H1	201	557
18	LI:238576.2:2001JAN12	3163862H1	201	493
18	LI:238576.2:2001JAN12	3199104H1	205	338
18	LI:238576.2:2001JAN12	5196915H1	205	478
18	LI:238576.2:2001JAN12	60123995D2	205	415
18	LI:238576.2:2001JAN12	4790072H1	207	491
18	LI:238576.2:2001JAN12	4549532H1	209	489

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
18	LI:238576.2:2001JAN12	3316908H1	210	468
18	LI:238576.2:2001JAN12	935927H1	210	437
18	LI:238576.2:2001JAN12	3928681H1	211	497
18	LI:238576.2:2001JAN12	2057892H1	210	469
18	LI:238576.2:2001JAN12	6161637H1	211	530
18	LI:238576.2:2001JAN12	139725H1	213	277
18	LI:238576.2:2001JAN12	139726H1	213	281
18	LI:238576.2:2001JAN12	5687728H1	216	497
18	LI:238576.2:2001JAN12	4997133F6	220	713
18	LI:238576.2:2001JAN12	3217567H1	219	521
18	LI:238576.2:2001JAN12	3950545H1	219	514
18	LI:238576.2:2001JAN12	3566683H1	220	475
18	LI:238576.2:2001JAN12	3900367H1	221	500
18	LI:238576.2:2001JAN12	4433278H1	222	500
18	LI:238576.2:2001JAN12	4997133H1	220	410
18	LI:238576.2:2001JAN12	1806022H1	223	498
18	LI:238576.2:2001JAN12	3080532H1	223	553
18	LI:238576.2:2001JAN12	3760343H1	226	529
18	LI:238576.2:2001JAN12	4220456H1	226	521
18	LI:238576.2:2001JAN12	1712435H1	227	454
18	LI:238576.2:2001JAN12	4221963H1	226	524
18	LI:238576.2:2001JAN12	4879766H1	228	479
18	LI:238576.2:2001JAN12	1419707H1	235	504
18	LI:238576.2:2001JAN12	3454496H2	240	506
18	LI:238576.2:2001JAN12	3533335H1	243	518
18	LI:238576.2:2001JAN12	4212591H1	243	517
18	LI:238576.2:2001JAN12	6329103H1	244	828
18	LI:238576.2:2001JAN12	3632279F6	243	765
18	LI:238576.2:2001JAN12	4668415H1	243	525
18	LI:238576.2:2001JAN12	3155123H1	243	531
18	LI:238576.2:2001JAN12	7286542H1	244	478
18	LI:238576.2:2001JAN12	1932192H1	245	521
18	LI:238576.2:2001JAN12	878880H1	246	483
18	LI:238576.2:2001JAN12	6563713H1	247	702
18	LI:238576.2:2001JAN12	6902103H1	250	869
18	LI:238576.2:2001JAN12	5810544H1	248	530
18	LI:238576.2:2001JAN12	134194R1	256	729
18	LI:238576.2:2001JAN12	5812769H1	253	556
18	LI:238576.2:2001JAN12	3539319H1	256	442
18	LI:238576.2:2001JAN12	134194H1	257	420
18	LI:238576.2:2001JAN12	134194R6	257	863
18	LI:238576.2:2001JAN12	3578956H1	151	420
18	LI:238576.2:2001JAN12	3616603H1	152	364
18	LI:238576.2:2001JAN12	2476111H1	156	396
18	LI:238576.2:2001JAN12	5762340H1	159	693
18	LI:238576.2:2001JAN12	3320288H1	161	435
18	LI:238576.2:2001JAN12	3320240H1	160	437
18	LI:238576.2:2001JAN12	g1981931	163	537
18	LI:238576.2:2001JAN12	3320841H1	167	443

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
18	LI:238576.2:2001JAN12	6286430H2	170	785
18	LI:238576.2:2001JAN12	6539558H1	170	727
18	LI:238576.2:2001JAN12	4069509H1	170	483
18	LI:238576.2:2001JAN12	2846475H1	170	443
18	LI:238576.2:2001JAN12	g5665303	171	641
18	LI:238576.2:2001JAN12	3085108H1	170	486
18	LI:238576.2:2001JAN12	2515442H1	177	519
18	LI:238576.2:2001JAN12	1406990H1	177	430
18	LI:238576.2:2001JAN12	1510768H1	176	390
18	LI:238576.2:2001JAN12	1512417H1	176	350
18	LI:238576.2:2001JAN12	4354246H1	179	460
18	LI:238576.2:2001JAN12	2863756H1	179	509
18	LI:238576.2:2001JAN12	3402689H1	181	428
18	LI:238576.2:2001JAN12	4193675H1	184	471
18	LI:238576.2:2001JAN12	5648061H1	182	453
18	LI:238576.2:2001JAN12	4445516H1	181	454
18	LI:238576.2:2001JAN12	5646947H1	182	422
18	LI:238576.2:2001JAN12	6252033H1	857	1271
18	LI:238576.2:2001JAN12	g2741102	858	1333
18	LI:238576.2:2001JAN12	6252420H1	862	1333
18	LI:238576.2:2001JAN12	3999837H1	863	1170
18	LI:238576.2:2001JAN12	4656292H1	863	1151
18	LI:238576.2:2001JAN12	g4533809	868	1334
18	LI:238576.2:2001JAN12	2698233H1	871	1113
18	LI:238576.2:2001JAN12	g4243339	872	1333
18	LI:238576.2:2001JAN12	g3751052	872	1333
18	LI:238576.2:2001JAN12	g4899785	872	1333
18	LI:238576.2:2001JAN12	4695842H1	869	1204
18	LI:238576.2:2001JAN12	5559592H1	825	1111
18	LI:238576.2:2001JAN12	6860869H1	836	1349
18	LI:238576.2:2001JAN12	535566H1	830	1118
18	LI:238576.2:2001JAN12	g5425786	832	1337
18	LI:238576.2:2001JAN12	g2964150	829	1342
18	LI:238576.2:2001JAN12	g5858287	835	1334
18	LI:238576.2:2001JAN12	g3884780	866	1336
18	LI:238576.2:2001JAN12	71218860V1	841	1333
18	LI:238576.2:2001JAN12	g5396715	849	1338
18	LI:238576.2:2001JAN12	5864305H1	849	1188
18	LI:238576.2:2001JAN12	5638395H1	849	1112
18	LI:238576.2:2001JAN12	1259213F1	854	1195
18	LI:238576.2:2001JAN12	1259213H1	854	1124
18	LI:238576.2:2001JAN12	6480833H1	1	439
18	LI:238576.2:2001JAN12	4753971H1	94	355
18	LI:238576.2:2001JAN12	5780889T6	104	682
18	LI:238576.2:2001JAN12	3854966H1	127	241
18	LI:238576.2:2001JAN12	905037H1	140	292
18	LI:238576.2:2001JAN12	3673616H1	140	450
18	LI:238576.2:2001JAN12	1298467H1	140	393
18	LI:238576.2:2001JAN12	8174823H1	143	802

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
18	LI:238576.2:2001JAN12	161642H1	148	248
18	LI:238576.2:2001JAN12	g5657944	919	1333
18	LI:238576.2:2001JAN12	g2017125	922	1157
18	LI:238576.2:2001JAN12	g1801517	922	1337
18	LI:238576.2:2001JAN12	70831682V1	924	1350
18	LI:238576.2:2001JAN12	7332139H1	931	1340
18	LI:238576.2:2001JAN12	71151083V1	929	1343
18	LI:238576.2:2001JAN12	6219936H2	930	1297
18	LI:238576.2:2001JAN12	6847334H1	943	1326
18	LI:238576.2:2001JAN12	2314966H1	934	1238
18	LI:238576.2:2001JAN12	g2270407	935	1092
18	LI:238576.2:2001JAN12	2314982H1	948	1234
18	LI:238576.2:2001JAN12	501348H1	946	1121
18	LI:238576.2:2001JAN12	501349R6	946	1344
18	LI:238576.2:2001JAN12	501349T6	946	1293
18	LI:238576.2:2001JAN12	3779876H1	947	1274
18	LI:238576.2:2001JAN12	g5665235	953	1333
18	LI:238576.2:2001JAN12	g5848253	954	1338
18	LI:238576.2:2001JAN12	406979H1	956	1213
18	LI:238576.2:2001JAN12	2684534H1	964	1221
18	LI:238576.2:2001JAN12	g3151135	969	1336
18	LI:238576.2:2001JAN12	g3118693	969	1340
18	LI:238576.2:2001JAN12	5030434H1	964	1217
18	LI:238576.2:2001JAN12	g4083461	970	1333
18	LI:238576.2:2001JAN12	g3677123	975	1333
18	LI:238576.2:2001JAN12	g3920030	976	1333
18	LI:238576.2:2001JAN12	g3594994	976	1336
18	LI:238576.2:2001JAN12	g3802778	976	1336
18	LI:238576.2:2001JAN12	2564348H1	984	1267
18	LI:238576.2:2001JAN12	g2268169	990	1333
18	LI:238576.2:2001JAN12	g2751136	990	1326
18	LI:238576.2:2001JAN12	g2206610	996	1333
18	LI:238576.2:2001JAN12	g1810373	1000	1312
18	LI:238576.2:2001JAN12	6847534H1	1006	1326
18	LI:238576.2:2001JAN12	g4684966	1014	1333
18	LI:238576.2:2001JAN12	627744H1	1016	1287
18	LI:238576.2:2001JAN12	1840346H1	1020	1290
18	LI:238576.2:2001JAN12	g2056756	1033	1333
18	LI:238576.2:2001JAN12	g1987610	1034	1332
18	LI:238576.2:2001JAN12	g1988233	1034	1321
18	LI:238576.2:2001JAN12	g1987797	1034	1299
18	LI:238576.2:2001JAN12	g5038005	1036	1326
18	LI:238576.2:2001JAN12	286743F1	1037	1333
18	LI:238576.2:2001JAN12	g983401	1049	1336
18	LI:238576.2:2001JAN12	6555494H1	1055	1333
18	LI:238576.2:2001JAN12	g960046	1050	1301
18	LI:238576.2:2001JAN12	g5553900	1051	1327
18	LI:238576.2:2001JAN12	g3070776	1051	1336
18	LI:238576.2:2001JAN12	606654H1	1061	1335

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
18	LI:238576.2:2001JAN12	g2463808	1068	1335
18	LI:238576.2:2001JAN12	g3070441	1074	1336
18	LI:238576.2:2001JAN12	5989860H1	1076	1330
18	LI:238576.2:2001JAN12	6395065H1	1080	1328
18	LI:238576.2:2001JAN12	g7701004	1085	1336
18	LI:238576.2:2001JAN12	1287503F1	1085	1335
18	LI:238576.2:2001JAN12	1287454H1	1085	1266
18	LI:238576.2:2001JAN12	6345648H1	1088	1333
18	LI:238576.2:2001JAN12	4124347H1	1087	1275
18	LI:238576.2:2001JAN12	6353879H1	1088	1325
18	LI:238576.2:2001JAN12	g5913340	1095	1333
18	LI:238576.2:2001JAN12	2558418H1	1128	1333
18	LI:238576.2:2001JAN12	g4150032	1133	1333
18	LI:238576.2:2001JAN12	5109779H1	1142	1338
18	LI:238576.2:2001JAN12	1925508R6	1143	1333
18	LI:238576.2:2001JAN12	1925508H1	1143	1333
18	LI:238576.2:2001JAN12	g5529626	1157	1333
18	LI:238576.2:2001JAN12	71175323V1	884	1088
18	LI:238576.2:2001JAN12	g5450857	874	1335
18	LI:238576.2:2001JAN12	g6046820	876	1335
18	LI:238576.2:2001JAN12	g3665665	880	1333
18	LI:238576.2:2001JAN12	4599219H1	875	1188
18	LI:238576.2:2001JAN12	227744R1	884	1335
18	LI:238576.2:2001JAN12	g5885583	885	1335
18	LI:238576.2:2001JAN12	371585H1	882	1124
18	LI:238576.2:2001JAN12	g2325594	886	1333
18	LI:238576.2:2001JAN12	g2195406	894	1332
18	LI:238576.2:2001JAN12	g4664967	897	1333
18	LI:238576.2:2001JAN12	g2674662	905	1335
18	LI:238576.2:2001JAN12	g3086953	906	1336
18	LI:238576.2:2001JAN12	g4095013	907	1333
18	LI:238576.2:2001JAN12	g5113058	909	1333
18	LI:238576.2:2001JAN12	70942171V1	909	1079
18	LI:238576.2:2001JAN12	g3958103	910	1333
18	LI:238576.2:2001JAN12	g2458743	916	1336
18	LI:238576.2:2001JAN12	g1383536	918	1316
18	LI:238576.2:2001JAN12	3728404H1	1165	1346
18	LI:238576.2:2001JAN12	g3034058	1168	1336
18	LI:238576.2:2001JAN12	235645H1	1183	1333
18	LI:238576.2:2001JAN12	236139H1	1183	1333
18	LI:238576.2:2001JAN12	2320995H1	1190	1337
18	LI:238576.2:2001JAN12	g1068687	1197	1316
18	LI:238576.2:2001JAN12	g3091528	1212	1333
18	LI:238576.2:2001JAN12	3078023H1	1243	1337
18	LI:238576.2:2001JAN12	786346H1	1253	1326
18	LI:238576.2:2001JAN12	6133859H1	1257	1333
18	LI:238576.2:2001JAN12	2278836H1	346	642
18	LI:238576.2:2001JAN12	4382957H1	346	617
18	LI:238576.2:2001JAN12	2562762H1	346	631

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
18	LI:238576.2:2001JAN12	6296712H1	348	729
18	LI:238576.2:2001JAN12	280390H1	349	730
18	LI:238576.2:2001JAN12	g1978517	352	741
18	LI:238576.2:2001JAN12	1711236H1	355	567
18	LI:238576.2:2001JAN12	2208941H1	355	564
18	LI:238576.2:2001JAN12	5330792H1	360	621
18	LI:238576.2:2001JAN12	2504585H1	366	619
18	LI:238576.2:2001JAN12	g1812559	366	594
18	LI:238576.2:2001JAN12	g1383596	670	1071
18	LI:238576.2:2001JAN12	879714H1	672	936
18	LI:238576.2:2001JAN12	71302655V1	678	1271
18	LI:238576.2:2001JAN12	60123995B2	681	1276
18	LI:238576.2:2001JAN12	g3886420	692	839
18	LI:238576.2:2001JAN12	71280905V1	691	867
18	LI:238576.2:2001JAN12	70834311V1	692	1309
18	LI:238576.2:2001JAN12	71154379V1	696	868
18	LI:238576.2:2001JAN12	71220284V1	707	1347
18	LI:238576.2:2001JAN12	265346T6	711	1292
18	LI:238576.2:2001JAN12	70832994V1	713	1348
18	LI:238576.2:2001JAN12	71219428V1	714	1338
18	LI:238576.2:2001JAN12	g2206609	715	1005
18	LI:238576.2:2001JAN12	70834220V1	738	1367
18	LI:238576.2:2001JAN12	4938140H1	734	1041
18	LI:238576.2:2001JAN12	g2717345	755	1315
18	LI:238576.2:2001JAN12	71302491V1	758	1326
18	LI:238576.2:2001JAN12	134194F1	762	1333
18	LI:238576.2:2001JAN12	134194T6	767	1134
18	LI:238576.2:2001JAN12	71301214V1	773	1326
18	LI:238576.2:2001JAN12	71152277V1	777	1333
18	LI:238576.2:2001JAN12	70947307V1	786	1174
18	LI:238576.2:2001JAN12	70834128V1	797	1349
18	LI:238576.2:2001JAN12	70831885V1	797	980
18	LI:238576.2:2001JAN12	71153557V1	388	995
18	LI:238576.2:2001JAN12	1379534H1	388	638
18	LI:238576.2:2001JAN12	2129696H1	403	675
18	LI:238576.2:2001JAN12	4938547H1	409	715
18	LI:238576.2:2001JAN12	2510749H1	415	770
18	LI:238576.2:2001JAN12	5659963H1	424	697
18	LI:238576.2:2001JAN12	1456371H1	421	678
18	LI:238576.2:2001JAN12	3604720H1	425	757
18	LI:238576.2:2001JAN12	g1977496	426	748
18	LI:238576.2:2001JAN12	71220503V1	428	921
18	LI:238576.2:2001JAN12	2748683H1	429	693
18	LI:238576.2:2001JAN12	5659664H1	432	695
18	LI:238576.2:2001JAN12	71153764V1	435	949
18	LI:238576.2:2001JAN12	3079315H1	453	784
18	LI:238576.2:2001JAN12	3257890H1	463	766
18	LI:238576.2:2001JAN12	2489834H1	464	705
18	LI:238576.2:2001JAN12	2244628H1	468	729

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
18	LI:238576.2:2001JAN12	1447415H1	470	748
18	LI:238576.2:2001JAN12	3769925H1	481	814
18	LI:238576.2:2001JAN12	6848683H1	481	1137
18	LI:238576.2:2001JAN12	851017H1	481	745
18	LI:238576.2:2001JAN12	3641003H1	486	718
18	LI:238576.2:2001JAN12	8262729U1	488	1214
18	LI:238576.2:2001JAN12	591481H1	489	667
18	LI:238576.2:2001JAN12	591512H1	489	730
18	LI:238576.2:2001JAN12	2316586H1	489	744
18	LI:238576.2:2001JAN12	71153782V1	508	1061
18	LI:238576.2:2001JAN12	5274050H1	511	666
18	LI:238576.2:2001JAN12	608208H1	513	779
18	LI:238576.2:2001JAN12	5904564H1	513	843
18	LI:238576.2:2001JAN12	6061631H1	517	1142
18	LI:238576.2:2001JAN12	2866403H1	523	849
18	LI:238576.2:2001JAN12	g983400	526	895
18	LI:238576.2:2001JAN12	4952292H1	543	799
18	LI:238576.2:2001JAN12	2181660H1	551	861
18	LI:238576.2:2001JAN12	5305886H1	559	809
18	LI:238576.2:2001JAN12	2563730H1	587	874
18	LI:238576.2:2001JAN12	4666484H1	590	858
18	LI:238576.2:2001JAN12	6438124H1	592	1137
18	LI:238576.2:2001JAN12	4666384H1	590	858
18	LI:238576.2:2001JAN12	70819958V1	599	1090
18	LI:238576.2:2001JAN12	3246108H1	599	743
18	LI:238576.2:2001JAN12	5440935H1	606	753
18	LI:238576.2:2001JAN12	70947851V1	617	973
18	LI:238576.2:2001JAN12	70947904V1	617	965
18	LI:238576.2:2001JAN12	2012901H1	615	700
18	LI:238576.2:2001JAN12	1355566H1	626	886
18	LI:238576.2:2001JAN12	1237154H1	625	870
18	LI:238576.2:2001JAN12	1724023H1	631	839
18	LI:238576.2:2001JAN12	71217985V1	632	819
18	LI:238576.2:2001JAN12	g2015041	637	1049
18	LI:238576.2:2001JAN12	3632279T6	640	1218
18	LI:238576.2:2001JAN12	6606557H1	647	1118
18	LI:238576.2:2001JAN12	1806939H1	646	950
18	LI:238576.2:2001JAN12	630175H1	645	736
18	LI:238576.2:2001JAN12	6513373H1	650	1275
18	LI:238576.2:2001JAN12	71151178V1	651	1252
18	LI:238576.2:2001JAN12	7342506H1	653	1014
18	LI:238576.2:2001JAN12	71301883V1	660	1323
18	LI:238576.2:2001JAN12	71301830V1	661	1344
18	LI:238576.2:2001JAN12	3866748H1	662	961
18	LI:238576.2:2001JAN12	3501407H1	662	995
18	LI:238576.2:2001JAN12	g891119	668	951
18	LI:238576.2:2001JAN12	7062009H1	673	1090
18	LI:238576.2:2001JAN12	6401339H1	369	652
18	LI:238576.2:2001JAN12	3483783H1	373	645

TABLE 3

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18	LI:238576.2:2001JAN12	3375342H1	370	620
18	LI:238576.2:2001JAN12	5473124H1	376	544
18	LI:238576.2:2001JAN12	5607966H1	375	647
18	LI:238576.2:2001JAN12	5610077H1	375	621
18	LI:238576.2:2001JAN12	4302082H1	378	648
18	LI:238576.2:2001JAN12	516261R1	385	1026
18	LI:238576.2:2001JAN12	516261H1	385	622
18	LI:238576.2:2001JAN12	g2110639	799	1249
18	LI:238576.2:2001JAN12	70832396V1	797	979
18	LI:238576.2:2001JAN12	1653928H1	809	1077
18	LI:238576.2:2001JAN12	71300941V1	814	1335
18	LI:238576.2:2001JAN12	70943453V1	814	979
18	LI:238576.2:2001JAN12	g2953761	815	1336
18	LI:238576.2:2001JAN12	g3933979	822	1336
18	LI:238576.2:2001JAN12	659592H1	820	1113
18	LI:238576.2:2001JAN12	g3674153	826	1333
18	LI:238576.2:2001JAN12	g2907492	824	1333
18	LI:238576.2:2001JAN12	5559560H1	825	1111
18	LI:238576.2:2001JAN12	g4329635	827	1333
19	LI:903914.3:2001JAN12	g6034066	2214	2619
19	LI:903914.3:2001JAN12	g3753899	2214	2626
19	LI:903914.3:2001JAN12	3907692H1	6327	6446
19	LI:903914.3:2001JAN12	4183814H1	5402	5595
19	LI:903914.3:2001JAN12	2657830H1	5427	5675
19	LI:903914.3:2001JAN12	71060769V1	5482	6060
19	LI:903914.3:2001JAN12	5786706H1	5494	5819
19	LI:903914.3:2001JAN12	5792665H1	5495	5821
19	LI:903914.3:2001JAN12	5792546H1	5495	5814
19	LI:903914.3:2001JAN12	5785277H1	5495	5811
19	LI:903914.3:2001JAN12	5784324H1	5495	5773
19	LI:903914.3:2001JAN12	71059036V1	5542	6072
19	LI:903914.3:2001JAN12	71058059V1	5572	6060
19	LI:903914.3:2001JAN12	3795036H1	5569	5742
19	LI:903914.3:2001JAN12	4291223H1	5607	5863
19	LI:903914.3:2001JAN12	4289457H1	5606	5867
19	LI:903914.3:2001JAN12	g889341	5634	6019
19	LI:903914.3:2001JAN12	71059190V1	5652	6060
19	LI:903914.3:2001JAN12	2799687T6	5668	5925
19	LI:903914.3:2001JAN12	g3052888	5671	6047
19	LI:903914.3:2001JAN12	2799687F6	5675	5961
19	LI:903914.3:2001JAN12	2799687H1	5675	5937
19	LI:903914.3:2001JAN12	71057687V1	5705	6060
19	LI:903914.3:2001JAN12	4028967H1	5705	5978
19	LI:903914.3:2001JAN12	2892448H1	5712	6001
19	LI:903914.3:2001JAN12	71060472V1	5733	6066
19	LI:903914.3:2001JAN12	71057894V1	5738	6060
19	LI:903914.3:2001JAN12	71060780V1	5741	6429
19	LI:903914.3:2001JAN12	4771032H1	5750	5848
19	LI:903914.3:2001JAN12	71057806V1	5758	6425

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
19	LI:903914.3:2001JAN12	3093970H1	5770	6068
19	LI:903914.3:2001JAN12	7606234J1	5771	6383
19	LI:903914.3:2001JAN12	6742281H1	5795	6060
19	LI:903914.3:2001JAN12	2545839H1	5795	6065
19	LI:903914.3:2001JAN12	5171474H1	5797	6087
19	LI:903914.3:2001JAN12	5171466H1	5797	6060
19	LI:903914.3:2001JAN12	6997870H1	5799	6060
19	LI:903914.3:2001JAN12	4440953H1	5815	6107
19	LI:903914.3:2001JAN12	6449694H1	5822	6400
19	LI:903914.3:2001JAN12	g672103	5851	6060
19	LI:903914.3:2001JAN12	1721643F6	5853	6060
19	LI:903914.3:2001JAN12	1721643H1	5853	6060
19	LI:903914.3:2001JAN12	g1978878	5858	6060
19	LI:903914.3:2001JAN12	71057338V1	5863	6430
19	LI:903914.3:2001JAN12	783475H1	5864	6060
19	LI:903914.3:2001JAN12	4804078H1	5884	6060
19	LI:903914.3:2001JAN12	5377751H1	4905	5174
19	LI:903914.3:2001JAN12	6995925H1	4945	5570
19	LI:903914.3:2001JAN12	8057384J1	4946	5577
19	LI:903914.3:2001JAN12	7690829H1	4947	5394
19	LI:903914.3:2001JAN12	3766583F6	4953	5480
19	LI:903914.3:2001JAN12	3766583H1	4955	5246
19	LI:903914.3:2001JAN12	7606234H1	4965	5532
19	LI:903914.3:2001JAN12	5345804H1	4965	5131
19	LI:903914.3:2001JAN12	71060752V1	4974	5583
19	LI:903914.3:2001JAN12	8019357J1	4993	5574
19	LI:903914.3:2001JAN12	7264779H1	5029	5608
19	LI:903914.3:2001JAN12	8057240J1	5034	5577
19	LI:903914.3:2001JAN12	7593965H1	5059	5675
19	LI:903914.3:2001JAN12	71059356V1	5083	5580
19	LI:903914.3:2001JAN12	7177956H1	5084	5635
19	LI:903914.3:2001JAN12	71113244V1	5092	5674
19	LI:903914.3:2001JAN12	7676356H1	5093	5731
19	LI:903914.3:2001JAN12	71059154V1	5153	5846
19	LI:903914.3:2001JAN12	6749237H1	5140	5706
19	LI:903914.3:2001JAN12	7697896J1	5143	5416
19	LI:903914.3:2001JAN12	71066503V1	5180	5570
19	LI:903914.3:2001JAN12	4029690H1	5184	5424
19	LI:903914.3:2001JAN12	71057449V1	5189	5835
19	LI:903914.3:2001JAN12	2915511H1	5204	5501
19	LI:903914.3:2001JAN12	2675323F6	5224	5515
19	LI:903914.3:2001JAN12	2675323H1	5216	5487
19	LI:903914.3:2001JAN12	6789742H1	5239	5553
19	LI:903914.3:2001JAN12	6789742J1	5239	5555
19	LI:903914.3:2001JAN12	71065419V1	5264	5618
19	LI:903914.3:2001JAN12	2894319H1	5269	5547
19	LI:903914.3:2001JAN12	1997860R6	5291	5824
19	LI:903914.3:2001JAN12	1997860H1	5291	5609
19	LI:903914.3:2001JAN12	5758191H1	5318	5608

TABLE 3

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19	LI:903914.3:2001JAN12	71059859V1	5333	5999
19	LI:903914.3:2001JAN12	1671345H1	5353	5588
19	LI:903914.3:2001JAN12	71060210V1	5372	5858
19	LI:903914.3:2001JAN12	71058855V1	5397	5974
19	LI:903914.3:2001JAN12	011839H1	5403	5738
19	LI:903914.3:2001JAN12	g1013746	4869	5145
19	LI:903914.3:2001JAN12	1743366H1	7299	7423
19	LI:903914.3:2001JAN12	1741327H1	7299	7423
19	LI:903914.3:2001JAN12	g6047724	7303	7431
19	LI:903914.3:2001JAN12	7668337H1	4855	5451
19	LI:903914.3:2001JAN12	4492309H1	7248	7419
19	LI:903914.3:2001JAN12	322278H1	7253	7424
19	LI:903914.3:2001JAN12	1549589H1	7257	7423
19	LI:903914.3:2001JAN12	1241062H1	7265	7419
19	LI:903914.3:2001JAN12	71083931V1	1875	2464
19	LI:903914.3:2001JAN12	g4186397	1872	2317
19	LI:903914.3:2001JAN12	2294257H1	1871	2111
19	LI:903914.3:2001JAN12	g1320521	1875	2279
19	LI:903914.3:2001JAN12	71083872V1	1875	2525
19	LI:903914.3:2001JAN12	71081902V1	1875	2443
19	LI:903914.3:2001JAN12	71254175V1	1875	2443
19	LI:903914.3:2001JAN12	71254028V1	1875	2432
19	LI:903914.3:2001JAN12	1367647R1	1875	2432
19	LI:903914.3:2001JAN12	71084015V1	1875	2413
19	LI:903914.3:2001JAN12	71084008V1	1875	2413
19	LI:903914.3:2001JAN12	71082302V1	1875	2321
19	LI:903914.3:2001JAN12	1989169H1	1875	2138
19	LI:903914.3:2001JAN12	1367647H1	1875	2087
19	LI:903914.3:2001JAN12	71253020V1	1875	2441
19	LI:903914.3:2001JAN12	1367647R6	1876	2494
19	LI:903914.3:2001JAN12	5273285H1	1885	2137
19	LI:903914.3:2001JAN12	3156244H1	1891	2174
19	LI:903914.3:2001JAN12	3678891H1	1893	1960
19	LI:903914.3:2001JAN12	385798H1	1908	2114
19	LI:903914.3:2001JAN12	2730331T6	1920	2572
19	LI:903914.3:2001JAN12	5699726H1	1920	2156
19	LI:903914.3:2001JAN12	71253961V1	1926	2547
19	LI:903914.3:2001JAN12	4556124H1	1926	2202
19	LI:903914.3:2001JAN12	2297603H2	1926	2111
19	LI:903914.3:2001JAN12	4020232T8	1980	2445
19	LI:903914.3:2001JAN12	4940639H1	1981	2283
19	LI:903914.3:2001JAN12	70776485V1	1988	2619
19	LI:903914.3:2001JAN12	2043303H1	1990	2282
19	LI:903914.3:2001JAN12	1909733H1	1991	2241
19	LI:903914.3:2001JAN12	6858206H1	2023	2370
19	LI:903914.3:2001JAN12	71081796V1	2026	2627
19	LI:903914.3:2001JAN12	5607490H1	2033	2290
19	LI:903914.3:2001JAN12	6363903H1	2037	2359
19	LI:903914.3:2001JAN12	4020232T9	2042	2511

TABLE 3

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19	LI:903914.3:2001JAN12	3247024H1	2046	2300
19	LI:903914.3:2001JAN12	2170128H1	2047	2300
19	LI:903914.3:2001JAN12	2372535H1	2053	2294
19	LI:903914.3:2001JAN12	3492337T6	2063	2582
19	LI:903914.3:2001JAN12	g1856248	2075	2525
19	LI:903914.3:2001JAN12	1569651T6	2077	2582
19	LI:903914.3:2001JAN12	1600963T6	2080	2581
19	LI:903914.3:2001JAN12	1243240H1	2086	2351
19	LI:903914.3:2001JAN12	1569651H1	2087	2304
19	LI:903914.3:2001JAN12	1569651F6	2087	2469
19	LI:903914.3:2001JAN12	1990456T6	2096	2580
19	LI:903914.3:2001JAN12	928796R1	2103	2590
19	LI:903914.3:2001JAN12	928796H1	2103	2438
19	LI:903914.3:2001JAN12	2118967H1	2117	2256
19	LI:903914.3:2001JAN12	g1734431	2119	2554
19	LI:903914.3:2001JAN12	3432729H1	2118	2395
19	LI:903914.3:2001JAN12	6123901H1	2129	2619
19	LI:903914.3:2001JAN12	g5454395	2130	2619
19	LI:903914.3:2001JAN12	g2321072	2136	2621
19	LI:903914.3:2001JAN12	2547870T6	2138	2581
19	LI:903914.3:2001JAN12	5447240H1	2140	2422
19	LI:903914.3:2001JAN12	g3427014	2144	2619
19	LI:903914.3:2001JAN12	5021831H1	2145	2435
19	LI:903914.3:2001JAN12	g6702158	2158	2619
19	LI:903914.3:2001JAN12	g5933209	2159	2619
19	LI:903914.3:2001JAN12	3958117H2	2172	2479
19	LI:903914.3:2001JAN12	g3110006	2177	2622
19	LI:903914.3:2001JAN12	g5234760	2181	2625
19	LI:903914.3:2001JAN12	g4450748	2190	2620
19	LI:903914.3:2001JAN12	g2914785	2205	2625
19	LI:903914.3:2001JAN12	g3961892	2208	2624
19	LI:903914.3:2001JAN12	805133H1	2211	2421
19	LI:903914.3:2001JAN12	70778718V1	1792	2420
19	LI:903914.3:2001JAN12	4554732H1	1793	2051
19	LI:903914.3:2001JAN12	g827323	1808	2043
19	LI:903914.3:2001JAN12	961934R1	1810	2234
19	LI:903914.3:2001JAN12	961934H1	1810	2087
19	LI:903914.3:2001JAN12	g1641446	1812	2044
19	LI:903914.3:2001JAN12	2293990H1	1818	1994
19	LI:903914.3:2001JAN12	835913H1	1821	2137
19	LI:903914.3:2001JAN12	1446465H1	1828	2070
19	LI:903914.3:2001JAN12	553648H1	1829	2071
19	LI:903914.3:2001JAN12	5393691H1	1830	2015
19	LI:903914.3:2001JAN12	421754H1	1830	1991
19	LI:903914.3:2001JAN12	6121866H1	1841	2048
19	LI:903914.3:2001JAN12	6126337H1	1841	2318
19	LI:903914.3:2001JAN12	4020232F8	1841	2280
19	LI:903914.3:2001JAN12	70778271V1	1841	2137
19	LI:903914.3:2001JAN12	70777566V1	1841	2122

TABLE 3

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19	LI:903914.3:2001JAN12	1990456F6	1841	2172
19	LI:903914.3:2001JAN12	4707821H1	1841	2077
19	LI:903914.3:2001JAN12	3000426H1	1841	2056
19	LI:903914.3:2001JAN12	4245793H1	1841	2037
19	LI:903914.3:2001JAN12	3003976H1	1841	2038
19	LI:903914.3:2001JAN12	2394666F6	1841	2034
19	LI:903914.3:2001JAN12	3580094H1	1841	2006
19	LI:903914.3:2001JAN12	2394666H1	1841	2003
19	LI:903914.3:2001JAN12	3272189H1	1841	1949
19	LI:903914.3:2001JAN12	4020531H1	1841	1989
19	LI:903914.3:2001JAN12	5347105H1	1841	1924
19	LI:903914.3:2001JAN12	2108566H1	1841	1917
19	LI:903914.3:2001JAN12	1990489H1	1841	1900
19	LI:903914.3:2001JAN12	3236769H1	1841	1899
19	LI:903914.3:2001JAN12	999733H1	1841	1959
19	LI:903914.3:2001JAN12	2905432H1	1841	1943
19	LI:903914.3:2001JAN12	6977235H1	1852	2416
19	LI:903914.3:2001JAN12	4205750H1	1851	2103
19	LI:903914.3:2001JAN12	2135434H1	1856	2114
19	LI:903914.3:2001JAN12	2442345H1	1866	2088
19	LI:903914.3:2001JAN12	4187650H1	1869	2188
19	LI:903914.3:2001JAN12	71252927V1	1875	2441
19	LI:903914.3:2001JAN12	70777216V1	1871	2523
19	LI:903914.3:2001JAN12	g2337025	7241	7419
19	LI:903914.3:2001JAN12	3907813H1	6327	6462
19	LI:903914.3:2001JAN12	2361452H1	4448	4692
19	LI:903914.3:2001JAN12	2361452R6	4451	4894
19	LI:903914.3:2001JAN12	g2023458	4467	4818
19	LI:903914.3:2001JAN12	3765601H1	4474	4767
19	LI:903914.3:2001JAN12	1527196H1	4496	4696
19	LI:903914.3:2001JAN12	7176537H1	4559	5141
19	LI:903914.3:2001JAN12	6400391H1	4577	4846
19	LI:903914.3:2001JAN12	g1975591	4619	4980
19	LI:903914.3:2001JAN12	6884909H1	4628	5099
19	LI:903914.3:2001JAN12	3769529H1	4679	4988
19	LI:903914.3:2001JAN12	7401247H1	4681	5238
19	LI:903914.3:2001JAN12	6784595H2	4690	5300
19	LI:903914.3:2001JAN12	6153049H1	4716	5009
19	LI:903914.3:2001JAN12	7760529J1	4742	5215
19	LI:903914.3:2001JAN12	4289851H1	4721	5013
19	LI:903914.3:2001JAN12	71060744V1	4728	5446
19	LI:903914.3:2001JAN12	g2021897	4739	5058
19	LI:903914.3:2001JAN12	3491063H1	4757	4935
19	LI:903914.3:2001JAN12	g1067589	4794	5143
19	LI:903914.3:2001JAN12	71060148V1	4809	5408
19	LI:903914.3:2001JAN12	916113H1	4809	5107
19	LI:903914.3:2001JAN12	917254H1	4787	4896
19	LI:903914.3:2001JAN12	8005801H1	4842	5510
19	LI:903914.3:2001JAN12	g3924026	2267	2622

TABLE 3

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19	LI:903914.3:2001JAN12	g5635220	2282	2619
19	LI:903914.3:2001JAN12	g1856164	2307	2619
19	LI:903914.3:2001JAN12	5021831T1	2315	2570
19	LI:903914.3:2001JAN12	g4123822	2320	2628
19	LI:903914.3:2001JAN12	3733681H1	2322	2504
19	LI:903914.3:2001JAN12	4219064T6	2337	2580
19	LI:903914.3:2001JAN12	4219064H1	2344	2497
19	LI:903914.3:2001JAN12	4219064F6	2344	2619
19	LI:903914.3:2001JAN12	g838434	2346	2620
19	LI:903914.3:2001JAN12	g722865	2349	2619
19	LI:903914.3:2001JAN12	5376422H1	2355	2578
19	LI:903914.3:2001JAN12	669580H1	2358	2619
19	LI:903914.3:2001JAN12	3122606H1	2363	2619
19	LI:903914.3:2001JAN12	5376420H1	2375	2578
19	LI:903914.3:2001JAN12	1493091H1	2387	2609
19	LI:903914.3:2001JAN12	507804H1	2392	2608
19	LI:903914.3:2001JAN12	g1740280	2417	2619
19	LI:903914.3:2001JAN12	g1265510	2417	2625
19	LI:903914.3:2001JAN12	g2752889	2444	2719
19	LI:903914.3:2001JAN12	g1990734	2443	2619
19	LI:903914.3:2001JAN12	1267265F1	2468	2708
19	LI:903914.3:2001JAN12	1267265H1	2468	2619
19	LI:903914.3:2001JAN12	7689215J1	2475	2886
19	LI:903914.3:2001JAN12	8065006J2	2480	2709
19	LI:903914.3:2001JAN12	717562H1	2502	2739
19	LI:903914.3:2001JAN12	g4325422	2519	2620
19	LI:903914.3:2001JAN12	g2191530	2533	2708
19	LI:903914.3:2001JAN12	g4087661	2557	2713
19	LI:903914.3:2001JAN12	6811344H1	2643	2891
19	LI:903914.3:2001JAN12	6811344J1	2644	2891
19	LI:903914.3:2001JAN12	851686R7	2656	2883
19	LI:903914.3:2001JAN12	851686H1	2656	2745
19	LI:903914.3:2001JAN12	7948951H1	2822	3461
19	LI:903914.3:2001JAN12	8103227J1	3123	3549
19	LI:903914.3:2001JAN12	7949060J1	3134	3549
19	LI:903914.3:2001JAN12	7951116J1	3134	3549
19	LI:903914.3:2001JAN12	8103227H1	3134	3549
19	LI:903914.3:2001JAN12	7949060H1	3145	3549
19	LI:903914.3:2001JAN12	7951116H1	3145	3549
19	LI:903914.3:2001JAN12	8104015J1	3150	3549
19	LI:903914.3:2001JAN12	8107232J1	3156	3549
19	LI:903914.3:2001JAN12	8104015H1	3161	3549
19	LI:903914.3:2001JAN12	8107232H1	3171	3549
19	LI:903914.3:2001JAN12	7949810J1	3190	3517
19	LI:903914.3:2001JAN12	7348048H1	3191	3612
19	LI:903914.3:2001JAN12	6766063J1	3194	3451
19	LI:903914.3:2001JAN12	5045589F6	3323	3851
19	LI:903914.3:2001JAN12	5045589H1	3323	3583
19	LI:903914.3:2001JAN12	7201185H2	3431	3872

TABLE 3

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19	LI:903914.3:2001JAN12	381610H1	3494	3777
19	LI:903914.3:2001JAN12	7324617H1	3549	3994
19	LI:903914.3:2001JAN12	7281557H1	3678	4148
19	LI:903914.3:2001JAN12	7230032H1	3700	4281
19	LI:903914.3:2001JAN12	7623635J1	3709	4216
19	LI:903914.3:2001JAN12	g1999864	3784	4164
19	LI:903914.3:2001JAN12	2730331H1	3893	3961
19	LI:903914.3:2001JAN12	7005732H1	3930	4500
19	LI:903914.3:2001JAN12	7376940H1	3989	4617
19	LI:903914.3:2001JAN12	7377084H1	3989	4459
19	LI:903914.3:2001JAN12	6984452H1	4080	4494
19	LI:903914.3:2001JAN12	6987957H1	4087	4505
19	LI:903914.3:2001JAN12	6450205H1	4172	4722
19	LI:903914.3:2001JAN12	71058745V1	4216	4813
19	LI:903914.3:2001JAN12	2849931F6	4216	4706
19	LI:903914.3:2001JAN12	2849931H1	4216	4429
19	LI:903914.3:2001JAN12	71059917V1	4216	4650
19	LI:903914.3:2001JAN12	g2243551	4248	4549
19	LI:903914.3:2001JAN12	3234057H2	4330	4597
19	LI:903914.3:2001JAN12	3234057F6	4330	5005
19	LI:903914.3:2001JAN12	7262938H1	4370	4982
19	LI:903914.3:2001JAN12	70775868V1	1772	2171
19	LI:903914.3:2001JAN12	3686071H1	7045	7346
19	LI:903914.3:2001JAN12	4547442H1	7051	7306
19	LI:903914.3:2001JAN12	7055567H1	7053	7423
19	LI:903914.3:2001JAN12	g889248	7059	7431
19	LI:903914.3:2001JAN12	1678124H1	7053	7298
19	LI:903914.3:2001JAN12	5875620H1	7061	7370
19	LI:903914.3:2001JAN12	g3694594	7073	7419
19	LI:903914.3:2001JAN12	g1123906	7083	7419
19	LI:903914.3:2001JAN12	4975315F6	7091	7419
19	LI:903914.3:2001JAN12	5266215H1	7092	7371
19	LI:903914.3:2001JAN12	g4452193	7099	7431
19	LI:903914.3:2001JAN12	g1186276	7107	7423
19	LI:903914.3:2001JAN12	5183196H1	7118	7336
19	LI:903914.3:2001JAN12	g856705	7127	7406
19	LI:903914.3:2001JAN12	677740H1	7131	7412
19	LI:903914.3:2001JAN12	676808H1	7131	7400
19	LI:903914.3:2001JAN12	g1013661	7140	7419
19	LI:903914.3:2001JAN12	2100964H1	7146	7414
19	LI:903914.3:2001JAN12	2540050H1	7150	7424
19	LI:903914.3:2001JAN12	g2252387	7150	7437
19	LI:903914.3:2001JAN12	930677H1	7158	7419
19	LI:903914.3:2001JAN12	930330R1	7158	7419
19	LI:903914.3:2001JAN12	930330H1	7158	7419
19	LI:903914.3:2001JAN12	930654T1	7158	7361
19	LI:903914.3:2001JAN12	930685H1	7158	7263
19	LI:903914.3:2001JAN12	2864854H1	7162	7388
19	LI:903914.3:2001JAN12	868707H1	7167	7423

TABLE 3

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19	LI:903914.3:2001JAN12	g1267192	7186	7432
19	LI:903914.3:2001JAN12	g562665	7193	7423
19	LI:903914.3:2001JAN12	6375970H1	7194	7392
19	LI:903914.3:2001JAN12	1399324H1	7201	7423
19	LI:903914.3:2001JAN12	1849865H1	7206	7423
19	LI:903914.3:2001JAN12	1849865F6	7206	7418
19	LI:903914.3:2001JAN12	1849865T6	7211	7351
19	LI:903914.3:2001JAN12	3230786H1	7213	7428
19	LI:903914.3:2001JAN12	g5454895	7217	7426
19	LI:903914.3:2001JAN12	g3846473	7224	7419
19	LI:903914.3:2001JAN12	6376346H1	7226	7424
19	LI:903914.3:2001JAN12	g2769135	7225	7423
19	LI:903914.3:2001JAN12	2361452T6	7229	7379
19	LI:903914.3:2001JAN12	g2321435	7238	7417
19	LI:903914.3:2001JAN12	1841486T6	6949	7370
19	LI:903914.3:2001JAN12	1848885H1	6953	7231
19	LI:903914.3:2001JAN12	3872091H1	6957	7160
19	LI:903914.3:2001JAN12	5834344H1	6958	7205
19	LI:903914.3:2001JAN12	3290474H1	6963	7238
19	LI:903914.3:2001JAN12	4020315H1	6966	7275
19	LI:903914.3:2001JAN12	g1264969	6969	7423
19	LI:903914.3:2001JAN12	5352320H1	6971	7233
19	LI:903914.3:2001JAN12	g1613949	6974	7423
19	LI:903914.3:2001JAN12	4131669H2	6972	7263
19	LI:903914.3:2001JAN12	g4307819	6975	7423
19	LI:903914.3:2001JAN12	g4307497	6975	7423
19	LI:903914.3:2001JAN12	g2941476	6978	7474
19	LI:903914.3:2001JAN12	g4307784	6984	7423
19	LI:903914.3:2001JAN12	g5113443	6987	7419
19	LI:903914.3:2001JAN12	g5656968	6989	7429
19	LI:903914.3:2001JAN12	3880474H1	6993	7269
19	LI:903914.3:2001JAN12	2763034H1	6997	7257
19	LI:903914.3:2001JAN12	4697488H1	6999	7259
19	LI:903914.3:2001JAN12	g2750785	6998	7378
19	LI:903914.3:2001JAN12	2675323R6	7002	7429
19	LI:903914.3:2001JAN12	2153952H1	7003	7306
19	LI:903914.3:2001JAN12	g3092434	7004	7421
19	LI:903914.3:2001JAN12	g856676	7016	7402
19	LI:903914.3:2001JAN12	g4453071	7011	7419
19	LI:903914.3:2001JAN12	5170747H1	7009	7246
19	LI:903914.3:2001JAN12	3282064H1	7013	7286
19	LI:903914.3:2001JAN12	g4307777	7026	7422
19	LI:903914.3:2001JAN12	g5591161	7035	7427
19	LI:903914.3:2001JAN12	1740132H1	7036	7312
19	LI:903914.3:2001JAN12	g3179611	7042	7423
19	LI:903914.3:2001JAN12	1837438H1	7042	7325
19	LI:903914.3:2001JAN12	2440653H1	7042	7312
19	LI:903914.3:2001JAN12	6295816H1	6650	6902
19	LI:903914.3:2001JAN12	5771396H1	6660	7230

TABLE 3

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19	LI:903914.3:2001JAN12	3937028H1	6670	6948
19	LI:903914.3:2001JAN12	606531H1	6691	6968
19	LI:903914.3:2001JAN12	684224H1	6691	6944
19	LI:903914.3:2001JAN12	3697493H1	6706	6991
19	LI:903914.3:2001JAN12	6612638H1	6706	6876
19	LI:903914.3:2001JAN12	5376226H1	6710	6970
19	LI:903914.3:2001JAN12	5377950H1	6715	6988
19	LI:903914.3:2001JAN12	1820719H1	6750	6985
19	LI:903914.3:2001JAN12	3784681H1	6754	7056
19	LI:903914.3:2001JAN12	4718760H1	6758	7033
19	LI:903914.3:2001JAN12	5757047H1	6762	7019
19	LI:903914.3:2001JAN12	7629775H1	6766	7420
19	LI:903914.3:2001JAN12	5205018H2	6766	7028
19	LI:903914.3:2001JAN12	1942527H1	6777	7024
19	LI:903914.3:2001JAN12	1997860T6	6798	7381
19	LI:903914.3:2001JAN12	671353H1	6801	7075
19	LI:903914.3:2001JAN12	362876F1	6804	7423
19	LI:903914.3:2001JAN12	2849931T6	6804	7380
19	LI:903914.3:2001JAN12	4058866H1	6806	6917
19	LI:903914.3:2001JAN12	4464979H1	6820	7058
19	LI:903914.3:2001JAN12	6052006J1	6826	7411
19	LI:903914.3:2001JAN12	5949433H1	6843	7200
19	LI:903914.3:2001JAN12	2043101H1	6856	7140
19	LI:903914.3:2001JAN12	g1641771	6854	7207
19	LI:903914.3:2001JAN12	3945569H1	6877	7113
19	LI:903914.3:2001JAN12	4657370H1	6883	7199
19	LI:903914.3:2001JAN12	1721643T6	6886	7384
19	LI:903914.3:2001JAN12	3766583T6	6893	7369
19	LI:903914.3:2001JAN12	71060681V1	6906	7449
19	LI:903914.3:2001JAN12	4190034H1	6912	7212
19	LI:903914.3:2001JAN12	1860946H1	6927	7144
19	LI:903914.3:2001JAN12	432051H1	6932	7253
19	LI:903914.3:2001JAN12	g2933159	6936	7423
19	LI:903914.3:2001JAN12	g7458418	6938	7426
19	LI:903914.3:2001JAN12	g5057082	6941	7422
19	LI:903914.3:2001JAN12	g4969803	6948	7310
19	LI:903914.3:2001JAN12	71059046V1	6327	6709
19	LI:903914.3:2001JAN12	71059950V1	6327	6694
19	LI:903914.3:2001JAN12	71059405V1	6327	6676
19	LI:903914.3:2001JAN12	6559733H1	6327	6625
19	LI:903914.3:2001JAN12	6523975H1	6327	6597
19	LI:903914.3:2001JAN12	6520304H1	6327	6591
19	LI:903914.3:2001JAN12	4312672H1	6327	6571
19	LI:903914.3:2001JAN12	4915157H1	6327	6562
19	LI:903914.3:2001JAN12	4847991H1	6327	6447
19	LI:903914.3:2001JAN12	4151259H1	6340	6615
19	LI:903914.3:2001JAN12	2269914H1	6340	6597
19	LI:903914.3:2001JAN12	3811276H1	6336	6632

TABLE 3

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19	LI:903914.3:2001JAN12	849332R1	6354	6955
19	LI:903914.3:2001JAN12	4528371H1	6360	6631
19	LI:903914.3:2001JAN12	4314581H1	6359	6636
19	LI:903914.3:2001JAN12	2437184H1	6360	6611
19	LI:903914.3:2001JAN12	2945963H1	6361	6688
19	LI:903914.3:2001JAN12	1841486R6	6387	6669
19	LI:903914.3:2001JAN12	1841486H1	6387	6662
19	LI:903914.3:2001JAN12	g1295442	6403	6960
19	LI:903914.3:2001JAN12	4214148H1	6411	6661
19	LI:903914.3:2001JAN12	4291340H1	6425	6522
19	LI:903914.3:2001JAN12	4019764H1	6431	6701
19	LI:903914.3:2001JAN12	5876161H1	6444	6701
19	LI:903914.3:2001JAN12	2413803H1	6450	6712
19	LI:903914.3:2001JAN12	7238106H1	6457	7035
19	LI:903914.3:2001JAN12	2470355H1	6468	6741
19	LI:903914.3:2001JAN12	817310R1	6472	7059
19	LI:903914.3:2001JAN12	993250H1	6486	6766
19	LI:903914.3:2001JAN12	5877179H1	6496	6790
19	LI:903914.3:2001JAN12	1432655R1	6500	7027
19	LI:903914.3:2001JAN12	1432655H1	6500	6758
19	LI:903914.3:2001JAN12	362876R1	6509	6983
19	LI:903914.3:2001JAN12	6295840H1	6514	6747
19	LI:903914.3:2001JAN12	5857931H1	6514	6813
19	LI:903914.3:2001JAN12	6292532H1	6514	6697
19	LI:903914.3:2001JAN12	5686608H1	6518	6836
19	LI:903914.3:2001JAN12	749001R1	6526	7074
19	LI:903914.3:2001JAN12	60133426V1	6536	6618
19	LI:903914.3:2001JAN12	60133428V1	6536	6739
19	LI:903914.3:2001JAN12	60133431V1	6536	6699
19	LI:903914.3:2001JAN12	1390750H1	6543	6750
19	LI:903914.3:2001JAN12	5433174H1	6566	6759
19	LI:903914.3:2001JAN12	2804231H1	6567	6834
19	LI:903914.3:2001JAN12	2628869H1	6567	6813
19	LI:903914.3:2001JAN12	4060925H1	6581	6743
19	LI:903914.3:2001JAN12	319948H1	6597	6999
19	LI:903914.3:2001JAN12	1306876H1	6596	6842
19	LI:903914.3:2001JAN12	5096421H1	6600	6834
19	LI:903914.3:2001JAN12	4024956H1	6605	6903
19	LI:903914.3:2001JAN12	3245265H1	6604	6881
19	LI:903914.3:2001JAN12	6064342H1	6605	6912
19	LI:903914.3:2001JAN12	5531985H1	6605	6878
19	LI:903914.3:2001JAN12	1853136H1	6613	6889
19	LI:903914.3:2001JAN12	5351404H1	6645	6918
19	LI:903914.3:2001JAN12	1924306H1	2251	2471
19	LI:903914.3:2001JAN12	3942245H1	6327	6425
19	LI:903914.3:2001JAN12	5665804H1	6327	6398
19	LI:903914.3:2001JAN12	7229817H1	6327	6801
19	LI:903914.3:2001JAN12	7233211H1	6327	6728

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19	LI:903914.3:2001JAN12	701473H1	2213	2489
19	LI:903914.3:2001JAN12	g2674759	2215	2697
19	LI:903914.3:2001JAN12	4979871H1	1500	1573
19	LI:903914.3:2001JAN12	3706347H1	1509	1573
19	LI:903914.3:2001JAN12	2730331F6	1593	2015
19	LI:903914.3:2001JAN12	660904H1	1740	1921
19	LI:903914.3:2001JAN12	3044527H1	6327	6458
19	LI:903914.3:2001JAN12	5848222H1	6327	6474
19	LI:903914.3:2001JAN12	71064557V1	5953	6377
19	LI:903914.3:2001JAN12	4569837H1	5966	6060
19	LI:903914.3:2001JAN12	2893660H1	5974	6060
19	LI:903914.3:2001JAN12	71058037V1	5997	6587
19	LI:903914.3:2001JAN12	7701709H1	6128	6790
19	LI:903914.3:2001JAN12	1839135H1	6134	6401
19	LI:903914.3:2001JAN12	2252132H1	6165	6394
19	LI:903914.3:2001JAN12	5720531H1	6296	6812
19	LI:903914.3:2001JAN12	449352H1	6310	6553
19	LI:903914.3:2001JAN12	1386956H1	6315	6566
19	LI:903914.3:2001JAN12	g2026407	6321	6571
19	LI:903914.3:2001JAN12	5800119H1	6324	6828
19	LI:903914.3:2001JAN12	5662508H1	6323	6609
19	LI:903914.3:2001JAN12	6052006H1	6327	6561
19	LI:903914.3:2001JAN12	6520204H1	6327	6518
19	LI:903914.3:2001JAN12	3021455H1	6327	6518
19	LI:903914.3:2001JAN12	71058395V1	5904	6592
19	LI:903914.3:2001JAN12	g3427623	5902	6060
19	LI:903914.3:2001JAN12	5429571H1	5917	6060
19	LI:903914.3:2001JAN12	2708592H1	5918	6060
19	LI:903914.3:2001JAN12	5868759H1	5919	6060
19	LI:903914.3:2001JAN12	2707536H1	5919	6060
19	LI:903914.3:2001JAN12	5868791H1	5920	6060
19	LI:903914.3:2001JAN12	3126247H1	5949	6060
19	LI:903914.3:2001JAN12	3982986H1	6327	6429
19	LI:903914.3:2001JAN12	g4392853	7309	7419
19	LI:903914.3:2001JAN12	g1013261	2252	2619
19	LI:903914.3:2001JAN12	g2874443	2217	2708
19	LI:903914.3:2001JAN12	4414572H1	2245	2503
19	LI:903914.3:2001JAN12	3750656H1	2249	2507
19	LI:903914.3:2001JAN12	g2216495	2216	2622
19	LI:903914.3:2001JAN12	g3742849	2214	2619
19	LI:903914.3:2001JAN12	g1119073	2214	2619
19	LI:903914.3:2001JAN12	6219841H2	2214	2586
19	LI:903914.3:2001JAN12	1006299H1	1146	1433
19	LI:903914.3:2001JAN12	068728H1	1160	1277
19	LI:903914.3:2001JAN12	5687390H1	1168	1423
19	LI:903914.3:2001JAN12	2547870F6	1191	1593
19	LI:903914.3:2001JAN12	8104052J1	1191	1573
19	LI:903914.3:2001JAN12	2547870H1	1191	1453

TABLE 3

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19	LI:903914.3:2001JAN12	70778720V1	1242	1569
19	LI:903914.3:2001JAN12	3142223H1	1259	1540
19	LI:903914.3:2001JAN12	70775698V1	1284	1573
19	LI:903914.3:2001JAN12	70776846V1	1303	1573
19	LI:903914.3:2001JAN12	70777640V1	1305	1947
19	LI:903914.3:2001JAN12	678366H1	1306	1591
19	LI:903914.3:2001JAN12	7647608J1	1323	1951
19	LI:903914.3:2001JAN12	4519410H1	1348	1573
19	LI:903914.3:2001JAN12	70781069V1	1377	1573
19	LI:903914.3:2001JAN12	70781021V1	1385	1573
19	LI:903914.3:2001JAN12	70779022V1	1388	1982
19	LI:903914.3:2001JAN12	70777204V1	1427	1997
19	LI:903914.3:2001JAN12	70777316V1	1437	1898
19	LI:903914.3:2001JAN12	5265270H2	1445	1573
19	LI:903914.3:2001JAN12	3720239H1	1482	1573
19	LI:903914.3:2001JAN12	116920R1	1486	1568
19	LI:903914.3:2001JAN12	116920H1	1486	1573
19	LI:903914.3:2001JAN12	7999947H1	1	479
19	LI:903914.3:2001JAN12	8004063H1	229	759
19	LI:903914.3:2001JAN12	g2191602	294	758
19	LI:903914.3:2001JAN12	5540783H1	351	468
19	LI:903914.3:2001JAN12	359504H1	391	583
19	LI:903914.3:2001JAN12	359504R6	391	762
19	LI:903914.3:2001JAN12	5909276H1	503	799
19	LI:903914.3:2001JAN12	1003345H1	664	937
19	LI:903914.3:2001JAN12	6925495H1	839	1108
19	LI:903914.3:2001JAN12	70779035V1	854	1382
19	LI:903914.3:2001JAN12	3492337F6	854	1124
19	LI:903914.3:2001JAN12	3492337H1	855	1122
19	LI:903914.3:2001JAN12	5379442H1	952	1114
19	LI:903914.3:2001JAN12	3157130H1	982	1257
19	LI:903914.3:2001JAN12	104634R6	1054	1473
19	LI:903914.3:2001JAN12	70778573V1	1133	1593
19	LI:903914.3:2001JAN12	7949577H1	1145	1598
19	LI:903914.3:2001JAN12	g2032795	1145	1354
19	LI:903914.3:2001JAN12	3207528H1	6327	6434
19	LI:903914.3:2001JAN12	7610456J1	5893	6508
19	LI:903914.3:2001JAN12	2410707H1	7326	7423
19	LI:903914.3:2001JAN12	4247638H1	7341	7423
19	LI:903914.3:2001JAN12	g2752668	7343	7419
19	LI:903914.3:2001JAN12	2130131H1	7363	7419
19	LI:903914.3:2001JAN12	7632580J1	3191	3294
19	LI:903914.3:2001JAN12	7464064H1	3567	4109
19	LI:903914.3:2001JAN12	7997457H1	584	1075
20	LI:150817.1:2001JAN12	490837H1	1	254
20	LI:150817.1:2001JAN12	490837R6	1	172
20	LI:150817.1:2001JAN12	70660369V1	110	737

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
20	LI:150817.1:2001JAN12	70660502V1	330	948
20	LI:150817.1:2001JAN12	70658217V1	354	811
20	LI:150817.1:2001JAN12	70657193V1	373	941
20	LI:150817.1:2001JAN12	70657139V1	485	941
20	LI:150817.1:2001JAN12	70657138V1	514	969
20	LI:150817.1:2001JAN12	70659173V1	604	1148
20	LI:150817.1:2001JAN12	70660195V1	697	1306
20	LI:150817.1:2001JAN12	70658942V1	707	1217
20	LI:150817.1:2001JAN12	70655575V1	718	1205
20	LI:150817.1:2001JAN12	70660329V1	741	1315
20	LI:150817.1:2001JAN12	70656696V1	775	1319
20	LI:150817.1:2001JAN12	70665015V1	783	1322
20	LI:150817.1:2001JAN12	70646875V1	786	1322
20	LI:150817.1:2001JAN12	70655650V1	842	1334
20	LI:150817.1:2001JAN12	70660055V1	860	1319
20	LI:150817.1:2001JAN12	70659977V1	881	1322
20	LI:150817.1:2001JAN12	70659456V1	931	1305
20	LI:150817.1:2001JAN12	70658365V1	988	1322
20	LI:150817.1:2001JAN12	1943823T6	1013	1313
20	LI:150817.1:2001JAN12	70655792V1	1025	1313
20	LI:150817.1:2001JAN12	70660911V1	1115	1313
20	LI:150817.1:2001JAN12	70657216V1	1208	1819
20	LI:150817.1:2001JAN12	70659311V1	1236	1788
20	LI:150817.1:2001JAN12	70656288V1	1241	1752
20	LI:150817.1:2001JAN12	70659276V1	1631	1867
20	LI:150817.1:2001JAN12	70660598V1	1643	1972
20	LI:150817.1:2001JAN12	70658469V1	1642	2192
20	LI:150817.1:2001JAN12	70660035V1	1643	1867
20	LI:150817.1:2001JAN12	70657033V1	1646	1996
20	LI:150817.1:2001JAN12	70660918V1	1646	1986
20	LI:150817.1:2001JAN12	70660689V1	1646	1899
20	LI:150817.1:2001JAN12	70656049V1	1741	2055
20	LI:150817.1:2001JAN12	70657104V1	1817	2445
20	LI:150817.1:2001JAN12	70657113V1	1925	2531
20	LI:150817.1:2001JAN12	70656974V1	1982	2142
20	LI:150817.1:2001JAN12	70660750V1	2088	2752
20	LI:150817.1:2001JAN12	70655811V1	2092	2644
20	LI:150817.1:2001JAN12	70660590V1	2124	2642
20	LI:150817.1:2001JAN12	70658522V1	2156	2706
20	LI:150817.1:2001JAN12	70658749V1	2211	2881
20	LI:150817.1:2001JAN12	70657879V1	2216	2770
20	LI:150817.1:2001JAN12	70659980V1	2216	2706
20	LI:150817.1:2001JAN12	70658750V1	2227	2706
20	LI:150817.1:2001JAN12	70660410V1	2330	2706
20	LI:150817.1:2001JAN12	70657215V1	2471	3064
20	LI:150817.1:2001JAN12	70658900V1	2496	2887
20	LI:150817.1:2001JAN12	70666665V1	2525	2837
20	LI:150817.1:2001JAN12	70660097V1	2529	3172
20	LI:150817.1:2001JAN12	70655859V1	2635	3095

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
20	LI:150817.1:2001JAN12	70656804V1	2645	3268
20	LI:150817.1:2001JAN12	70660877V1	2736	3338
20	LI:150817.1:2001JAN12	70658919V1	2763	3278
20	LI:150817.1:2001JAN12	70660310V1	2785	3409
20	LI:150817.1:2001JAN12	70660962V1	2814	3329
20	LI:150817.1:2001JAN12	70656859V1	2847	3380
20	LI:150817.1:2001JAN12	70661070V1	2861	3440
20	LI:150817.1:2001JAN12	70659328V1	2911	3510
20	LI:150817.1:2001JAN12	70656712V1	2918	3249
20	LI:150817.1:2001JAN12	70658699V1	2926	3615
20	LI:150817.1:2001JAN12	70659651V1	3066	3220
20	LI:150817.1:2001JAN12	70656080V1	3123	3618
20	LI:150817.1:2001JAN12	70657164V1	3273	3822
20	LI:150817.1:2001JAN12	70660846V1	3295	3647
20	LI:150817.1:2001JAN12	70656680V1	3329	3734
20	LI:150817.1:2001JAN12	70655999V1	3435	3981
20	LI:150817.1:2001JAN12	70657815V1	3427	3749
20	LI:150817.1:2001JAN12	70656558V1	3508	4114
20	LI:150817.1:2001JAN12	70658284V1	3636	4257
20	LI:150817.1:2001JAN12	70656011V1	3792	4270
20	LI:150817.1:2001JAN12	70658626V1	3857	4415
20	LI:150817.1:2001JAN12	70658812V1	3960	4415
21	LI:219627.1:2001JAN12	70789358V1	1393	1804
21	LI:219627.1:2001JAN12	70788326V1	1531	2095
21	LI:219627.1:2001JAN12	70790250V1	1612	2077
21	LI:219627.1:2001JAN12	70788017V1	1571	2067
21	LI:219627.1:2001JAN12	70791462V1	2006	2158
21	LI:219627.1:2001JAN12	70790742V1	1384	2155
21	LI:219627.1:2001JAN12	70792302V1	1445	2142
21	LI:219627.1:2001JAN12	70788748V1	1485	2107
21	LI:219627.1:2001JAN12	70792649V1	905	1371
21	LI:219627.1:2001JAN12	70792154V1	747	1357
21	LI:219627.1:2001JAN12	70789945V1	775	1346
21	LI:219627.1:2001JAN12	70789514V1	757	1310
21	LI:219627.1:2001JAN12	70792971V1	914	1304
21	LI:219627.1:2001JAN12	70790749V1	759	1298
21	LI:219627.1:2001JAN12	70791220V1	576	1207
21	LI:219627.1:2001JAN12	70788290V1	952	1130
21	LI:219627.1:2001JAN12	70791665V1	905	1131
21	LI:219627.1:2001JAN12	70787851V1	531	1083
21	LI:219627.1:2001JAN12	70789143V1	608	1082
21	LI:219627.1:2001JAN12	g2158893	600	1037
21	LI:219627.1:2001JAN12	70788396V1	803	1000
21	LI:219627.1:2001JAN12	70789866V1	383	935
21	LI:219627.1:2001JAN12	70789214V1	714	917
21	LI:219627.1:2001JAN12	4031871F6	383	771
21	LI:219627.1:2001JAN12	4031871H1	383	625
21	LI:219627.1:2001JAN12	g5340544	97	536
21	LI:219627.1:2001JAN12	g3146729	300	503

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
21	LI:219627.1:2001JAN12	70790411V1	1068	1584
21	LI:219627.1:2001JAN12	70788322V1	1034	1579
21	LI:219627.1:2001JAN12	70792873V1	1022	1534
21	LI:219627.1:2001JAN12	g3057511	1331	1519
21	LI:219627.1:2001JAN12	g5441098	1064	1519
21	LI:219627.1:2001JAN12	70787956V1	977	1504
21	LI:219627.1:2001JAN12	70790407V1	970	1475
21	LI:219627.1:2001JAN12	70788313V1	909	1466
21	LI:219627.1:2001JAN12	70787561V1	884	1449
21	LI:219627.1:2001JAN12	70790141V1	893	1392
21	LI:219627.1:2001JAN12	70788429V1	847	1383
21	LI:219627.1:2001JAN12	g2158894	915	1379
21	LI:219627.1:2001JAN12	70792054V1	802	1373
21	LI:219627.1:2001JAN12	70788620V1	1065	1655
21	LI:219627.1:2001JAN12	70788818V1	1303	1669
21	LI:219627.1:2001JAN12	70792338V1	1105	1669
21	LI:219627.1:2001JAN12	70790643V1	1610	1669
21	LI:219627.1:2001JAN12	70789004V1	1183	1669
21	LI:219627.1:2001JAN12	70789678V1	1440	1669
21	LI:219627.1:2001JAN12	70789318V1	1516	1669
21	LI:219627.1:2001JAN12	70788994V1	1232	1669
21	LI:219627.1:2001JAN12	70793045V1	1206	1658
21	LI:219627.1:2001JAN12	70791928V1	1297	1670
21	LI:219627.1:2001JAN12	70790374V1	1389	1669
21	LI:219627.1:2001JAN12	70793231V1	1344	1677
21	LI:219627.1:2001JAN12	70792560V1	1548	1669
21	LI:219627.1:2001JAN12	70790741V1	1191	1693
21	LI:219627.1:2001JAN12	70790021V1	1316	1677
21	LI:219627.1:2001JAN12	g2903300	188	472
21	LI:219627.1:2001JAN12	g6073244	1	438
22	LI:197812.4:2001JAN12	6845095F8	1	321
22	LI:197812.4:2001JAN12	6845095H1	1	338
22	LI:197812.4:2001JAN12	6845095T8	1	238
23	LI:101525.1:2001JAN12	71032233V1	1596	2032
23	LI:101525.1:2001JAN12	70973792V1	1596	2032
23	LI:101525.1:2001JAN12	70973476V1	1650	2184
23	LI:101525.1:2001JAN12	70971931V1	1715	2243
23	LI:101525.1:2001JAN12	70974856V1	1754	2320
23	LI:101525.1:2001JAN12	70974126V1	1777	2198
23	LI:101525.1:2001JAN12	70974960V1	1883	2402
23	LI:101525.1:2001JAN12	71291604V1	785	1291
23	LI:101525.1:2001JAN12	70974489V1	876	1291
23	LI:101525.1:2001JAN12	70972101V1	883	1325
23	LI:101525.1:2001JAN12	70971439V1	902	1291
23	LI:101525.1:2001JAN12	70973738V1	955	1291
23	LI:101525.1:2001JAN12	g2268726	958	1221
23	LI:101525.1:2001JAN12	71292025V1	1038	1291
23	LI:101525.1:2001JAN12	71290752V1	1039	1293
23	LI:101525.1:2001JAN12	70972211V1	1050	1291

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
23	LI:101525.1:2001JAN12	70974879V1	1124	1258
23	LI:101525.1:2001JAN12	70973578V1	1155	1823
23	LI:101525.1:2001JAN12	71290943V1	1228	1687
23	LI:101525.1:2001JAN12	71291628V1	1593	2001
23	LI:101525.1:2001JAN12	70973404V1	1588	2216
23	LI:101525.1:2001JAN12	70974980V1	1592	1963
23	LI:101525.1:2001JAN12	71290746V1	1591	1919
23	LI:101525.1:2001JAN12	71291848V1	1592	1931
23	LI:101525.1:2001JAN12	2866445H1	1	294
23	LI:101525.1:2001JAN12	2866445F6	1	470
23	LI:101525.1:2001JAN12	5523470F6	147	549
23	LI:101525.1:2001JAN12	5523470H1	147	372
23	LI:101525.1:2001JAN12	71291594V1	236	880
23	LI:101525.1:2001JAN12	70973566V1	287	933
23	LI:101525.1:2001JAN12	8122508H1	348	953
23	LI:101525.1:2001JAN12	8121078H1	348	821
23	LI:101525.1:2001JAN12	8121568H1	348	967
23	LI:101525.1:2001JAN12	71291773V1	630	1090
23	LI:101525.1:2001JAN12	70972946V1	2057	2311
23	LI:101525.1:2001JAN12	70973242V1	2168	2717
23	LI:101525.1:2001JAN12	g7038453	2194	2311
23	LI:101525.1:2001JAN12	71032294V1	2219	2311
24	LI:891123.1:2001JAN12	5317671T8	177	619
24	LI:891123.1:2001JAN12	6387528H1	197	479
24	LI:891123.1:2001JAN12	71927257V1	475	978
24	LI:891123.1:2001JAN12	70613467V1	1	701
24	LI:891123.1:2001JAN12	71663758V1	150	470
25	LI:813500.1:2001JAN12	776875R6	1577	2060
25	LI:813500.1:2001JAN12	841791R6	1577	2074
25	LI:813500.1:2001JAN12	776875T6	1577	2017
25	LI:813500.1:2001JAN12	769578T6	1577	2017
25	LI:813500.1:2001JAN12	758083T6	1577	2016
25	LI:813500.1:2001JAN12	838871R1	1577	1988
25	LI:813500.1:2001JAN12	838897H1	1577	1843
25	LI:813500.1:2001JAN12	838871H1	1577	1822
25	LI:813500.1:2001JAN12	841791H1	1577	1780
25	LI:813500.1:2001JAN12	70344686D1	1591	2060
25	LI:813500.1:2001JAN12	60200800B2	1595	2035
25	LI:813500.1:2001JAN12	70297201D1	1595	1942
25	LI:813500.1:2001JAN12	70297436D1	1595	1942
25	LI:813500.1:2001JAN12	70297130D1	543	1128
25	LI:813500.1:2001JAN12	70295601D1	539	1094
25	LI:813500.1:2001JAN12	70297568D1	100	586
25	LI:813500.1:2001JAN12	70344684D1	101	553
25	LI:813500.1:2001JAN12	70343680D1	502	931
25	LI:813500.1:2001JAN12	70343917D1	430	941
25	LI:813500.1:2001JAN12	70344229D1	430	946
25	LI:813500.1:2001JAN12	70296843D1	430	931
25	LI:813500.1:2001JAN12	70296386D1	430	910

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
25	LI:813500.1:2001JAN12	60200804D1	1614	1907
25	LI:813500.1:2001JAN12	70344803D1	1614	1827
25	LI:813500.1:2001JAN12	60200800B1	1615	2041
25	LI:813500.1:2001JAN12	70297661D1	933	1308
25	LI:813500.1:2001JAN12	70296070D1	933	1319
25	LI:813500.1:2001JAN12	70296640D1	937	1334
25	LI:813500.1:2001JAN12	70343576D1	565	930
25	LI:813500.1:2001JAN12	70297133D1	579	1128
25	LI:813500.1:2001JAN12	70344246D1	589	1128
25	LI:813500.1:2001JAN12	70343101D1	632	1093
25	LI:813500.1:2001JAN12	70343621D1	686	1266
25	LI:813500.1:2001JAN12	70296505D1	783	1266
25	LI:813500.1:2001JAN12	70344147D1	796	1334
25	LI:813500.1:2001JAN12	70297031D1	820	1334
25	LI:813500.1:2001JAN12	70344777D1	932	1281
25	LI:813500.1:2001JAN12	70344249D1	546	1128
25	LI:813500.1:2001JAN12	70296056D1	563	1094
25	LI:813500.1:2001JAN12	70344119D1	1636	2013
25	LI:813500.1:2001JAN12	70343617D1	1626	1926
25	LI:813500.1:2001JAN12	70343645D1	1636	2058
25	LI:813500.1:2001JAN12	70296529D1	1636	2008
25	LI:813500.1:2001JAN12	70297003D1	1636	1995
25	LI:813500.1:2001JAN12	70297501D1	1636	1942
25	LI:813500.1:2001JAN12	70295521D1	1636	1942
25	LI:813500.1:2001JAN12	70344617D1	1636	1923
25	LI:813500.1:2001JAN12	70343021D1	1636	1941
25	LI:813500.1:2001JAN12	70297570D1	1658	2073
25	LI:813500.1:2001JAN12	g5659389	1668	2055
25	LI:813500.1:2001JAN12	60200801B1	1772	2038
25	LI:813500.1:2001JAN12	7638617J1	1839	2062
25	LI:813500.1:2001JAN12	70343776D1	462	931
25	LI:813500.1:2001JAN12	70297773D1	430	611
25	LI:813500.1:2001JAN12	70343961D1	430	932
25	LI:813500.1:2001JAN12	70296414D1	430	860
25	LI:813500.1:2001JAN12	70296086D1	942	1314
25	LI:813500.1:2001JAN12	60200803D1	1190	1686
25	LI:813500.1:2001JAN12	70343502D1	430	903
25	LI:813500.1:2001JAN12	70344638D1	430	832
25	LI:813500.1:2001JAN12	70296835D1	316	930
25	LI:813500.1:2001JAN12	70297112D1	365	931
25	LI:813500.1:2001JAN12	70295543D1	368	875
25	LI:813500.1:2001JAN12	70343591D1	402	931
25	LI:813500.1:2001JAN12	70343322D1	405	931
25	LI:813500.1:2001JAN12	70343486D1	430	827
25	LI:813500.1:2001JAN12	70296428D1	431	756
25	LI:813500.1:2001JAN12	70343951D1	433	931
25	LI:813500.1:2001JAN12	70295863D1	375	960
25	LI:813500.1:2001JAN12	70344307D1	375	840
25	LI:813500.1:2001JAN12	70343363D1	375	960

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
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25	LI:813500.1:2001JAN12	70344004D1	378	840
25	LI:813500.1:2001JAN12	70343959D1	473	931
25	LI:813500.1:2001JAN12	769578R6	1577	2053
25	LI:813500.1:2001JAN12	60200805D1	1238	1713
25	LI:813500.1:2001JAN12	758083R6	1577	2060
25	LI:813500.1:2001JAN12	60200803B2	1615	2025
25	LI:813500.1:2001JAN12	70343670D1	1626	2052
25	LI:813500.1:2001JAN12	70344674D1	1626	1946
25	LI:813500.1:2001JAN12	70296554D1	1626	2052
25	LI:813500.1:2001JAN12	70295894D1	1626	2059
25	LI:813500.1:2001JAN12	70296220D1	1626	2075
25	LI:813500.1:2001JAN12	70297558D1	1626	2154
25	LI:813500.1:2001JAN12	70296501D1	1626	2020
25	LI:813500.1:2001JAN12	70343544D1	430	1002
25	LI:813500.1:2001JAN12	70297113D1	430	1018
25	LI:813500.1:2001JAN12	70344228D1	384	931
25	LI:813500.1:2001JAN12	60200802D1	393	873
25	LI:813500.1:2001JAN12	70296888D1	398	840
25	LI:813500.1:2001JAN12	7313445H1	1	372
25	LI:813500.1:2001JAN12	60200800D1	100	600
25	LI:813500.1:2001JAN12	3852016T8	1611	1978
25	LI:813500.1:2001JAN12	3852016H1	1612	1826
25	LI:813500.1:2001JAN12	70343530D1	430	963
25	LI:813500.1:2001JAN12	70297494D1	108	661
25	LI:813500.1:2001JAN12	70344610D1	109	679
25	LI:813500.1:2001JAN12	60200801D1	128	610
25	LI:813500.1:2001JAN12	70295896D1	245	737
25	LI:813500.1:2001JAN12	70295913D1	259	840
25	LI:813500.1:2001JAN12	70297191D1	263	840
25	LI:813500.1:2001JAN12	70344720D1	269	885
25	LI:813500.1:2001JAN12	70344164D1	269	743
25	LI:813500.1:2001JAN12	70344415D1	269	682
25	LI:813500.1:2001JAN12	70344014D1	269	429
25	LI:813500.1:2001JAN12	70296898D1	269	429
25	LI:813500.1:2001JAN12	3852016F8	1611	2077
25	LI:813500.1:2001JAN12	70297739D1	1614	2052
25	LI:813500.1:2001JAN12	70297687D1	1614	2003
25	LI:813500.1:2001JAN12	70296845D1	430	931
25	LI:813500.1:2001JAN12	70297522D1	430	1041
25	LI:813500.1:2001JAN12	70296564D1	539	931
26	LI:1037251.1:2001JAN12	7611686J1	29	701
26	LI:1037251.1:2001JAN12	7371589H1	41	632
26	LI:1037251.1:2001JAN12	7709296J1	90	653
26	LI:1037251.1:2001JAN12	7679005H1	101	514
26	LI:1037251.1:2001JAN12	7689031J1	118	801
26	LI:1037251.1:2001JAN12	8057425J1	243	807
26	LI:1037251.1:2001JAN12	7603548J1	333	896
26	LI:1037251.1:2001JAN12	8045689H1	377	1013

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
26	LI:1037251.1:2001JAN12	7367091H1	580	1157
26	LI:1037251.1:2001JAN12	8096224H1	854	1311
26	LI:1037251.1:2001JAN12	8095595H1	958	1517
26	LI:1037251.1:2001JAN12	6444487F8	1013	1621
26	LI:1037251.1:2001JAN12	7581788H1	1021	1460
26	LI:1037251.1:2001JAN12	7714966J1	1039	1314
26	LI:1037251.1:2001JAN12	7597602H1	1097	1609
26	LI:1037251.1:2001JAN12	7951081H1	1113	1309
26	LI:1037251.1:2001JAN12	7102957R8	1184	1628
26	LI:1037251.1:2001JAN12	7701607H1	1338	1745
26	LI:1037251.1:2001JAN12	7701607J1	1332	1929
26	LI:1037251.1:2001JAN12	g7280119	1332	1681
26	LI:1037251.1:2001JAN12	7458852H1	1366	1892
26	LI:1037251.1:2001JAN12	g6655995	1368	1800
26	LI:1037251.1:2001JAN12	7126809F8	1385	1950
26	LI:1037251.1:2001JAN12	7969583H1	1443	1959
26	LI:1037251.1:2001JAN12	7614391H1	1546	1948
26	LI:1037251.1:2001JAN12	g7455649	1559	1949
26	LI:1037251.1:2001JAN12	g5810040	1570	1897
26	LI:1037251.1:2001JAN12	g7039869	1580	1949
26	LI:1037251.1:2001JAN12	7589244H2	1686	1948
26	LI:1037251.1:2001JAN12	g6641269	1807	1912
26	LI:1037251.1:2001JAN12	7658341J1	1	419
26	LI:1037251.1:2001JAN12	7579302H1	23	524
27	LI:2032187.1:2001JAN12	7958638J1	293	966
27	LI:2032187.1:2001JAN12	7705503H1	464	946
27	LI:2032187.1:2001JAN12	8211563H1	684	1442
27	LI:2032187.1:2001JAN12	71884877V1	402	922
27	LI:2032187.1:2001JAN12	8273937T1	732	1395
27	LI:2032187.1:2001JAN12	71894564V1	642	1364
27	LI:2032187.1:2001JAN12	71893737V1	561	1360
27	LI:2032187.1:2001JAN12	71891279V1	541	1265
27	LI:2032187.1:2001JAN12	71893377V1	389	1089
27	LI:2032187.1:2001JAN12	71891061V1	338	985
27	LI:2032187.1:2001JAN12	71893504V1	286	991
27	LI:2032187.1:2001JAN12	71894109V1	126	833
27	LI:2032187.1:2001JAN12	71893826V1	44	822
27	LI:2032187.1:2001JAN12	71892181V1	126	784
27	LI:2032187.1:2001JAN12	71894843V1	133	786
27	LI:2032187.1:2001JAN12	71893566V1	1	680
27	LI:2032187.1:2001JAN12	71890772V1	1	659
27	LI:2032187.1:2001JAN12	71886767V1	389	628
28	LI:347572.1:2001JAN12	71874076V1	980	1454
28	LI:347572.1:2001JAN12	70554784V1	880	1489
28	LI:347572.1:2001JAN12	70555282V1	874	1351
28	LI:347572.1:2001JAN12	71872965V1	877	1445
28	LI:347572.1:2001JAN12	70554866V1	610	1267
28	LI:347572.1:2001JAN12	70327790D1	619	1151
28	LI:347572.1:2001JAN12	70325412D1	625	1023

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
28	LI:347572.1:2001JAN12	70555710V1	607	1252
28	LI:347572.1:2001JAN12	71872432V1	1196	1915
28	LI:347572.1:2001JAN12	71873187V1	1034	1683
28	LI:347572.1:2001JAN12	71873164V1	1035	1684
28	LI:347572.1:2001JAN12	70557489V1	1035	1702
28	LI:347572.1:2001JAN12	70554717V1	1039	1472
28	LI:347572.1:2001JAN12	71873912V1	1065	1659
28	LI:347572.1:2001JAN12	71874475V1	1068	1770
28	LI:347572.1:2001JAN12	71874659V1	1074	1389
28	LI:347572.1:2001JAN12	71875716V1	1090	1476
28	LI:347572.1:2001JAN12	71875169V1	1099	1739
28	LI:347572.1:2001JAN12	6784929H1	1102	1526
28	LI:347572.1:2001JAN12	6828695J1	1105	1805
28	LI:347572.1:2001JAN12	70556000V1	1114	1821
28	LI:347572.1:2001JAN12	71873744V1	1116	1827
28	LI:347572.1:2001JAN12	6934607H1	1119	1669
28	LI:347572.1:2001JAN12	71874117V1	1141	1710
28	LI:347572.1:2001JAN12	70449057V1	1145	1268
28	LI:347572.1:2001JAN12	71874337V1	1156	1827
28	LI:347572.1:2001JAN12	71874106V1	1157	1693
28	LI:347572.1:2001JAN12	71876327V1	1155	1618
28	LI:347572.1:2001JAN12	71875276V1	1155	1634
28	LI:347572.1:2001JAN12	71874020V1	1162	1743
28	LI:347572.1:2001JAN12	71871824V1	1165	1530
28	LI:347572.1:2001JAN12	71303301V1	1185	1662
28	LI:347572.1:2001JAN12	5811393F6	1194	1808
28	LI:347572.1:2001JAN12	5811393H1	1194	1520
28	LI:347572.1:2001JAN12	71156521V1	1194	1769
28	LI:347572.1:2001JAN12	71156205V1	1194	1796
28	LI:347572.1:2001JAN12	70554808V1	581	1226
28	LI:347572.1:2001JAN12	71873644V1	604	1294
28	LI:347572.1:2001JAN12	71874522V1	991	1602
28	LI:347572.1:2001JAN12	70555075V1	872	1447
28	LI:347572.1:2001JAN12	71873029V1	576	1290
28	LI:347572.1:2001JAN12	70556236V1	566	1306
28	LI:347572.1:2001JAN12	70554574V1	570	1222
28	LI:347572.1:2001JAN12	71873604V1	547	1009
28	LI:347572.1:2001JAN12	71872814V1	1767	2324
28	LI:347572.1:2001JAN12	71873827V1	1767	2324
28	LI:347572.1:2001JAN12	70554892V1	1780	2446
28	LI:347572.1:2001JAN12	70554965V1	1780	2429
28	LI:347572.1:2001JAN12	71157870V1	1669	2289
28	LI:347572.1:2001JAN12	70556820V1	1686	2330
28	LI:347572.1:2001JAN12	6389818H1	1742	2079
28	LI:347572.1:2001JAN12	6416418H1	1742	1974
28	LI:347572.1:2001JAN12	4518860H1	1747	2023
28	LI:347572.1:2001JAN12	71875546V1	1663	2303
28	LI:347572.1:2001JAN12	70560338V1	1486	2105
28	LI:347572.1:2001JAN12	70326191D1	1501	1846

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
28	LI:347572.1:2001JAN12	71873356V1	1473	2031
28	LI:347572.1:2001JAN12	70557288V1	1482	2113
28	LI:347572.1:2001JAN12	71874760V1	1484	1745
28	LI:347572.1:2001JAN12	71874458V1	1484	1745
28	LI:347572.1:2001JAN12	71873121V1	524	1161
28	LI:347572.1:2001JAN12	72334930V1	514	1110
28	LI:347572.1:2001JAN12	71157532V1	1969	2458
28	LI:347572.1:2001JAN12	71303442V1	1951	2619
28	LI:347572.1:2001JAN12	5542815H1	1962	2117
28	LI:347572.1:2001JAN12	71156493V1	1939	2585
28	LI:347572.1:2001JAN12	71876243V1	1971	2101
28	LI:347572.1:2001JAN12	70555668V1	1981	2636
28	LI:347572.1:2001JAN12	71872502V1	1995	2548
28	LI:347572.1:2001JAN12	70555958V1	2020	2748
28	LI:347572.1:2001JAN12	70555146V1	2021	2672
28	LI:347572.1:2001JAN12	71303538V1	2050	2571
28	LI:347572.1:2001JAN12	71304228V1	2049	2676
28	LI:347572.1:2001JAN12	6496937H1	2059	2615
28	LI:347572.1:2001JAN12	305090H1	2062	2404
28	LI:347572.1:2001JAN12	305090R6	2063	2445
28	LI:347572.1:2001JAN12	4598818H1	2088	2347
28	LI:347572.1:2001JAN12	71874592V1	2117	2746
28	LI:347572.1:2001JAN12	71874574V1	2118	2744
28	LI:347572.1:2001JAN12	6349213H2	2146	2481
28	LI:347572.1:2001JAN12	70554811V1	2158	2817
28	LI:347572.1:2001JAN12	4515767H1	2161	2301
28	LI:347572.1:2001JAN12	71875449V1	2192	2841
28	LI:347572.1:2001JAN12	71872419V1	2257	2821
28	LI:347572.1:2001JAN12	71303748V1	2230	2767
28	LI:347572.1:2001JAN12	70328165D1	2243	2860
28	LI:347572.1:2001JAN12	70326303D1	2243	2828
28	LI:347572.1:2001JAN12	70326287D1	2243	2548
28	LI:347572.1:2001JAN12	71155657V1	2256	2857
28	LI:347572.1:2001JAN12	71875041V1	2264	2819
28	LI:347572.1:2001JAN12	71869592V1	2264	2509
28	LI:347572.1:2001JAN12	1501621F6	2284	2845
28	LI:347572.1:2001JAN12	1501621H1	2284	2481
28	LI:347572.1:2001JAN12	72335048V1	2309	2465
28	LI:347572.1:2001JAN12	72334938V1	2310	2465
28	LI:347572.1:2001JAN12	71870640V1	2311	2561
28	LI:347572.1:2001JAN12	71873414V1	2370	2821
28	LI:347572.1:2001JAN12	70557357V1	2382	3069
28	LI:347572.1:2001JAN12	71157279V1	2388	2925
28	LI:347572.1:2001JAN12	6116935H1	2389	2667
28	LI:347572.1:2001JAN12	70325710D1	2432	2896
28	LI:347572.1:2001JAN12	70325612D1	2509	2911
28	LI:347572.1:2001JAN12	70328746D1	2509	2876
28	LI:347572.1:2001JAN12	70327564D1	1618	2097
28	LI:347572.1:2001JAN12	4670450H1	1632	1842

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
28	LI:347572.1:2001JAN12	71873093V1	1652	2229
28	LI:347572.1:2001JAN12	g5848554	3328	3605
28	LI:347572.1:2001JAN12	2770719T6	3367	3618
28	LI:347572.1:2001JAN12	6416515H1	3438	3605
28	LI:347572.1:2001JAN12	70555206V1	1443	2074
28	LI:347572.1:2001JAN12	4438947H1	2592	2871
28	LI:347572.1:2001JAN12	71156387V1	2607	3038
28	LI:347572.1:2001JAN12	71303533V1	2661	3094
28	LI:347572.1:2001JAN12	7353820H1	2678	3042
28	LI:347572.1:2001JAN12	4539057H1	2712	2970
28	LI:347572.1:2001JAN12	2328218H1	2788	3054
28	LI:347572.1:2001JAN12	71989940V1	2802	3588
28	LI:347572.1:2001JAN12	71304436V1	2821	3373
28	LI:347572.1:2001JAN12	71157628V1	2865	3438
28	LI:347572.1:2001JAN12	5106567H1	2868	3116
28	LI:347572.1:2001JAN12	4599088H1	2916	3176
28	LI:347572.1:2001JAN12	71991623V1	2948	3657
28	LI:347572.1:2001JAN12	71991624V1	2964	3666
28	LI:347572.1:2001JAN12	71873583V1	1437	2100
28	LI:347572.1:2001JAN12	70555054V1	1440	2039
28	LI:347572.1:2001JAN12	72335788V1	1441	1783
28	LI:347572.1:2001JAN12	4441126H1	1442	1732
28	LI:347572.1:2001JAN12	70555906V1	482	1101
28	LI:347572.1:2001JAN12	70557145V1	489	1190
28	LI:347572.1:2001JAN12	6788770H1	511	1121
28	LI:347572.1:2001JAN12	71873703V1	512	1014
28	LI:347572.1:2001JAN12	71874424V1	426	1111
28	LI:347572.1:2001JAN12	71873494V1	476	1157
28	LI:347572.1:2001JAN12	71873445V1	1921	2464
28	LI:347572.1:2001JAN12	71872975V1	817	1348
28	LI:347572.1:2001JAN12	70557219V1	818	1487
28	LI:347572.1:2001JAN12	71873072V1	825	1546
28	LI:347572.1:2001JAN12	71872581V1	864	1320
28	LI:347572.1:2001JAN12	71873524V1	866	1417
28	LI:347572.1:2001JAN12	71304277V1	1917	2579
28	LI:347572.1:2001JAN12	71873836V1	1435	2140
28	LI:347572.1:2001JAN12	70556149V1	1429	2090
28	LI:347572.1:2001JAN12	71874315V1	966	1506
28	LI:347572.1:2001JAN12	71874126V1	988	1550
28	LI:347572.1:2001JAN12	71874156V1	1411	1947
28	LI:347572.1:2001JAN12	70556256V1	1426	2145
28	LI:347572.1:2001JAN12	70326508D1	1881	1957
28	LI:347572.1:2001JAN12	71156538V1	1610	2126
28	LI:347572.1:2001JAN12	71872885V1	818	1348
28	LI:347572.1:2001JAN12	71874479V1	366	927
28	LI:347572.1:2001JAN12	71873206V1	420	1157
28	LI:347572.1:2001JAN12	71875190V1	301	852
28	LI:347572.1:2001JAN12	3696047F6	1587	2158
28	LI:347572.1:2001JAN12	3696047H1	1589	1899

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
28	LI:347572.1:2001JAN12	71158742V1	1604	2220
28	LI:347572.1:2001JAN12	71875367V1	1407	2036
28	LI:347572.1:2001JAN12	71874085V1	815	1462
28	LI:347572.1:2001JAN12	3699373H1	25	340
28	LI:347572.1:2001JAN12	70327386D1	26	382
28	LI:347572.1:2001JAN12	6784564H2	35	537
28	LI:347572.1:2001JAN12	6786847H2	39	675
28	LI:347572.1:2001JAN12	70328701D1	115	604
28	LI:347572.1:2001JAN12	70554791V1	269	853
28	LI:347572.1:2001JAN12	70557024V1	1857	2551
28	LI:347572.1:2001JAN12	70326732D1	1881	2226
28	LI:347572.1:2001JAN12	71873228V1	1381	1941
28	LI:347572.1:2001JAN12	71875062V1	1406	2131
28	LI:347572.1:2001JAN12	71873547V1	1381	1941
28	LI:347572.1:2001JAN12	70554523V1	806	1599
28	LI:347572.1:2001JAN12	70557092V1	798	1441
28	LI:347572.1:2001JAN12	4179553H1	21	247
28	LI:347572.1:2001JAN12	71874109V1	24	162
28	LI:347572.1:2001JAN12	71875577V1	922	1476
28	LI:347572.1:2001JAN12	71874930V1	941	1663
28	LI:347572.1:2001JAN12	71872822V1	951	1671
28	LI:347572.1:2001JAN12	70556389V1	958	1486
28	LI:347572.1:2001JAN12	71872491V1	1377	2044
28	LI:347572.1:2001JAN12	71872623V1	1377	2043
28	LI:347572.1:2001JAN12	70555528V1	1380	2090
28	LI:347572.1:2001JAN12	70556961V1	774	1485
28	LI:347572.1:2001JAN12	71876167V1	790	964
28	LI:347572.1:2001JAN12	71874464V1	755	1473
28	LI:347572.1:2001JAN12	71158362V1	1823	2595
28	LI:347572.1:2001JAN12	70557446V1	1826	2467
28	LI:347572.1:2001JAN12	71874757V1	1336	1709
28	LI:347572.1:2001JAN12	70326574D1	1340	1801
28	LI:347572.1:2001JAN12	7629109J1	1346	1737
28	LI:347572.1:2001JAN12	7629109H1	1346	1737
28	LI:347572.1:2001JAN12	70555309V1	1357	1983
28	LI:347572.1:2001JAN12	70555879V1	757	1373
28	LI:347572.1:2001JAN12	71304118V1	1821	2451
28	LI:347572.1:2001JAN12	3279857H1	1798	2085
28	LI:347572.1:2001JAN12	71873191V1	1322	1929
28	LI:347572.1:2001JAN12	71875680V1	1794	2027
28	LI:347572.1:2001JAN12	70556404V1	1557	2115
28	LI:347572.1:2001JAN12	71873172V1	1307	2068
28	LI:347572.1:2001JAN12	71873872V1	1292	2038
28	LI:347572.1:2001JAN12	71874274V1	1559	2175
28	LI:347572.1:2001JAN12	6830659H1	742	1312
28	LI:347572.1:2001JAN12	71875377V1	1536	2121
28	LI:347572.1:2001JAN12	70555359V1	740	1356
28	LI:347572.1:2001JAN12	2925464H1	16	274
28	LI:347572.1:2001JAN12	4179553F8	21	515

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
28	LI:347572.1:2001JAN12	71156954V1	2534	3020
28	LI:347572.1:2001JAN12	761848H1	2549	2743
28	LI:347572.1:2001JAN12	2528759H1	2514	2772
28	LI:347572.1:2001JAN12	70555774V1	2549	3232
28	LI:347572.1:2001JAN12	4172634F6	2591	3169
28	LI:347572.1:2001JAN12	3222459H1	2553	2920
28	LI:347572.1:2001JAN12	4172634H1	2591	2877
28	LI:347572.1:2001JAN12	71155779V1	2554	3142
28	LI:347572.1:2001JAN12	71980069V1	2591	3456
28	LI:347572.1:2001JAN12	71988432V1	2591	3290
28	LI:347572.1:2001JAN12	71873666V1	1526	2118
28	LI:347572.1:2001JAN12	71303881V1	1527	2128
28	LI:347572.1:2001JAN12	8124422H1	1509	2190
28	LI:347572.1:2001JAN12	70327556D1	1520	2097
28	LI:347572.1:2001JAN12	70446298V1	1281	1940
28	LI:347572.1:2001JAN12	70446257V1	1283	1937
28	LI:347572.1:2001JAN12	71874434V1	883	1601
28	LI:347572.1:2001JAN12	71873016V1	897	1590
28	LI:347572.1:2001JAN12	6785373H1	907	1509
28	LI:347572.1:2001JAN12	70555300V1	730	1307
28	LI:347572.1:2001JAN12	70554782V1	738	1431
28	LI:347572.1:2001JAN12	1582746H1	3313	3567
28	LI:347572.1:2001JAN12	g7317002	3442	3605
28	LI:347572.1:2001JAN12	g4739984	3524	3605
28	LI:347572.1:2001JAN12	4179741T9	2966	3534
28	LI:347572.1:2001JAN12	70556579V1	2952	3281
28	LI:347572.1:2001JAN12	71303602V1	2958	3644
28	LI:347572.1:2001JAN12	g2099950	3219	3458
28	LI:347572.1:2001JAN12	g2051100	2977	3283
28	LI:347572.1:2001JAN12	6075277H1	2981	3189
28	LI:347572.1:2001JAN12	g7278026	3250	3605
28	LI:347572.1:2001JAN12	1426361F6	3012	3472
28	LI:347572.1:2001JAN12	g5664324	3250	3605
28	LI:347572.1:2001JAN12	1426357H1	3012	3216
28	LI:347572.1:2001JAN12	71131546V1	3021	3329
28	LI:347572.1:2001JAN12	5536040H1	3065	3300
28	LI:347572.1:2001JAN12	1501621T6	3108	3622
28	LI:347572.1:2001JAN12	71158019V1	3113	3605
28	LI:347572.1:2001JAN12	4050931H1	3132	3454
28	LI:347572.1:2001JAN12	70326238D1	3143	3605
28	LI:347572.1:2001JAN12	4179553T9	3155	3518
28	LI:347572.1:2001JAN12	71156430V1	3157	3605
28	LI:347572.1:2001JAN12	g4665411	3160	3605
28	LI:347572.1:2001JAN12	g6658497	3170	3661
28	LI:347572.1:2001JAN12	4172634T6	3179	3615
28	LI:347572.1:2001JAN12	g2099982	3184	3605
28	LI:347572.1:2001JAN12	2770719H1	3210	3499
28	LI:347572.1:2001JAN12	g5452554	3275	3664
28	LI:347572.1:2001JAN12	2770719F6	3210	3421

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
28	LI:347572.1:2001JAN12	g2077519	3217	3605
28	LI:347572.1:2001JAN12	2925464F6	16	570
28	LI:347572.1:2001JAN12	4179240H1	17	287
28	LI:347572.1:2001JAN12	4874914H1	4	263
28	LI:347572.1:2001JAN12	4179741H1	4	294
28	LI:347572.1:2001JAN12	6785591H1	12	524
28	LI:347572.1:2001JAN12	6830659J1	1782	2441
28	LI:347572.1:2001JAN12	71874444V1	1213	1849
28	LI:347572.1:2001JAN12	g5850365	1212	1592
28	LI:347572.1:2001JAN12	g5865429	1217	1537
28	LI:347572.1:2001JAN12	71872572V1	1247	1920
28	LI:347572.1:2001JAN12	71874921V1	1267	1914
28	LI:347572.1:2001JAN12	71872613V1	1199	1905
28	LI:347572.1:2001JAN12	71157014V1	1194	1832
28	LI:347572.1:2001JAN12	71158855V1	1194	1698
28	LI:347572.1:2001JAN12	70556118V1	986	1611
28	LI:347572.1:2001JAN12	71874918V1	991	1586
28	LI:347572.1:2001JAN12	71874740V1	716	1370
28	LI:347572.1:2001JAN12	71873309V1	730	1454
28	LI:347572.1:2001JAN12	2868052H1	716	861
28	LI:347572.1:2001JAN12	6828695H1	711	1332
28	LI:347572.1:2001JAN12	71874448V1	656	1329
28	LI:347572.1:2001JAN12	70326955D1	625	1033
28	LI:347572.1:2001JAN12	71873533V1	638	1273
28	LI:347572.1:2001JAN12	6787884H1	1	326
28	LI:347572.1:2001JAN12	6788638H1	13	474
28	LI:347572.1:2001JAN12	6788583H1	1	583
29	LI:007788.1:2001JAN12	71438538V1	1	543
29	LI:007788.1:2001JAN12	71434963V1	584	1151
29	LI:007788.1:2001JAN12	71434939V1	585	1149
29	LI:007788.1:2001JAN12	6968941U1	627	971
29	LI:007788.1:2001JAN12	71442343V1	837	1286
29	LI:007788.1:2001JAN12	71457233V1	630	981
29	LI:007788.1:2001JAN12	71442968V1	628	1057
29	LI:007788.1:2001JAN12	71432203V1	667	1225
29	LI:007788.1:2001JAN12	71426610V1	375	481
29	LI:007788.1:2001JAN12	71436995V1	540	1112
29	LI:007788.1:2001JAN12	71440391V1	253	822
29	LI:007788.1:2001JAN12	71438372V1	282	1156
29	LI:007788.1:2001JAN12	71432321V1	294	791
29	LI:007788.1:2001JAN12	71440960V1	315	961
29	LI:007788.1:2001JAN12	71432360V1	350	888
29	LI:007788.1:2001JAN12	71442282V1	366	876
29	LI:007788.1:2001JAN12	71441217V1	160	681
29	LI:007788.1:2001JAN12	71422030V1	251	503
29	LI:007788.1:2001JAN12	71454158V1	719	906
29	LI:007788.1:2001JAN12	71443151V1	720	1085
29	LI:007788.1:2001JAN12	71448621V1	689	1145
29	LI:007788.1:2001JAN12	71443729V1	693	1314

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
29	LI:007788.1:2001JAN12	71443176V1	715	1061
29	LI:007788.1:2001JAN12	71420002V1	1304	1568
29	LI:007788.1:2001JAN12	71423336V1	1313	1535
29	LI:007788.1:2001JAN12	71434893V1	1319	2016
29	LI:007788.1:2001JAN12	71461970V1	141	410
29	LI:007788.1:2001JAN12	g1886530	1	272
29	LI:007788.1:2001JAN12	71440642V1	532	1047
29	LI:007788.1:2001JAN12	71433158V1	407	960
29	LI:007788.1:2001JAN12	71435741V1	407	1072
29	LI:007788.1:2001JAN12	71436321V1	411	1064
29	LI:007788.1:2001JAN12	71437008V1	422	988
29	LI:007788.1:2001JAN12	71432688V1	494	902
29	LI:007788.1:2001JAN12	71433925V1	400	1023
29	LI:007788.1:2001JAN12	71436863V1	394	1305
29	LI:007788.1:2001JAN12	71440938V1	379	1055
29	LI:007788.1:2001JAN12	71432125V1	385	943
29	LI:007788.1:2001JAN12	71432566V1	540	948
29	LI:007788.1:2001JAN12	71424751V1	815	1338
29	LI:007788.1:2001JAN12	71438151V1	836	1393
29	LI:007788.1:2001JAN12	71431916V1	828	1059
29	LI:007788.1:2001JAN12	71437201V1	830	991
29	LI:007788.1:2001JAN12	71438468V1	863	1619
29	LI:007788.1:2001JAN12	71437217V1	745	1429
29	LI:007788.1:2001JAN12	71434111V1	787	1501
29	LI:007788.1:2001JAN12	71436255V1	745	1040
29	LI:007788.1:2001JAN12	71436709V1	735	1044
29	LI:007788.1:2001JAN12	71438643V1	733	1514
29	LI:007788.1:2001JAN12	2844842H1	1	270
29	LI:007788.1:2001JAN12	2844842F6	1	600
29	LI:007788.1:2001JAN12	71440088V1	61	715
29	LI:007788.1:2001JAN12	71436911V1	141	608
29	LI:007788.1:2001JAN12	71433281V1	1212	1655
29	LI:007788.1:2001JAN12	71429319V1	1282	1515
29	LI:007788.1:2001JAN12	71438954V1	1142	1718
29	LI:007788.1:2001JAN12	71440857V1	1148	1649
29	LI:007788.1:2001JAN12	71439354V1	1150	1655
29	LI:007788.1:2001JAN12	71441496V1	1150	1652
29	LI:007788.1:2001JAN12	71440905V1	1149	1632
29	LI:007788.1:2001JAN12	2844842T6	1191	1652
29	LI:007788.1:2001JAN12	71433422V1	1208	1648
29	LI:007788.1:2001JAN12	71438640V1	1377	1541
29	LI:007788.1:2001JAN12	71441467V1	1361	1976
29	LI:007788.1:2001JAN12	71436418V1	1407	2043
29	LI:007788.1:2001JAN12	71440289V1	1493	2094
29	LI:007788.1:2001JAN12	71441919V1	1477	1997
29	LI:007788.1:2001JAN12	71435052V1	1496	2057
29	LI:007788.1:2001JAN12	71435995V1	1497	2015
29	LI:007788.1:2001JAN12	6630554U1	1507	2016
29	LI:007788.1:2001JAN12	71433818V1	1573	1890

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
29	LI:007788.1:2001JAN12	71449687V1	1822	1980
29	LI:007788.1:2001JAN12	71433309V1	1941	2085
29	LI:007788.1:2001JAN12	71440820V1	1	542
29	LI:007788.1:2001JAN12	71440319V1	887	1496
29	LI:007788.1:2001JAN12	71433851V1	872	1489
29	LI:007788.1:2001JAN12	71439124V1	928	1571
29	LI:007788.1:2001JAN12	71435518V1	915	1379
29	LI:007788.1:2001JAN12	71435541V1	932	1067
29	LI:007788.1:2001JAN12	71442095V1	929	1450
29	LI:007788.1:2001JAN12	71434718V1	992	1509
29	LI:007788.1:2001JAN12	71436909V1	1002	1618
29	LI:007788.1:2001JAN12	71436829V1	972	1306
29	LI:007788.1:2001JAN12	71435725V1	1094	1710
29	LI:007788.1:2001JAN12	71433312V1	1124	1652
29	LI:007788.1:2001JAN12	71437003V1	1136	1583
29	LI:007788.1:2001JAN12	71436059V1	1145	1891
30	LI:336872.1:2001JAN12	70986562V1	381	825
30	LI:336872.1:2001JAN12	70984072V1	399	737
30	LI:336872.1:2001JAN12	70985543V1	399	827
30	LI:336872.1:2001JAN12	71295516V1	399	823
30	LI:336872.1:2001JAN12	71295044V1	399	766
30	LI:336872.1:2001JAN12	70986344V1	399	652
30	LI:336872.1:2001JAN12	71295036V1	290	825
30	LI:336872.1:2001JAN12	3384358F8	322	825
30	LI:336872.1:2001JAN12	70985880V1	322	582
30	LI:336872.1:2001JAN12	71295290V1	322	572
30	LI:336872.1:2001JAN12	70986588V1	322	519
30	LI:336872.1:2001JAN12	70985351V1	322	551
30	LI:336872.1:2001JAN12	3384358H1	329	501
30	LI:336872.1:2001JAN12	71123582V1	329	433
30	LI:336872.1:2001JAN12	6535837F8	18	699
30	LI:336872.1:2001JAN12	3365081H1	1	161
30	LI:336872.1:2001JAN12	6535437H1	18	470
30	LI:336872.1:2001JAN12	71296536V1	570	1200
30	LI:336872.1:2001JAN12	71295432V1	606	825
30	LI:336872.1:2001JAN12	70983429V1	648	1210
30	LI:336872.1:2001JAN12	2261815H1	656	825
30	LI:336872.1:2001JAN12	71294916V1	672	1295
30	LI:336872.1:2001JAN12	70985853V1	679	1328
30	LI:336872.1:2001JAN12	3717638F6	765	1254
30	LI:336872.1:2001JAN12	3717638H1	765	825
30	LI:336872.1:2001JAN12	71269157V1	1060	1281
30	LI:336872.1:2001JAN12	70983024V1	512	1142
30	LI:336872.1:2001JAN12	71294736V1	512	825
30	LI:336872.1:2001JAN12	70986361V1	548	1192
30	LI:336872.1:2001JAN12	70986118V1	547	825
30	LI:336872.1:2001JAN12	70984218V1	1067	1300
30	LI:336872.1:2001JAN12	71295238V1	1069	1229
30	LI:336872.1:2001JAN12	71295235V1	1070	1711

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
30	LI:336872.1:2001JAN12	70985136V1	1073	1353
30	LI:336872.1:2001JAN12	g1980540	1450	1632
30	LI:336872.1:2001JAN12	g760823	1465	1597
30	LI:336872.1:2001JAN12	71295531V1	1076	1456
30	LI:336872.1:2001JAN12	3717638T6	1083	1574
30	LI:336872.1:2001JAN12	70984050V1	1224	1741
30	LI:336872.1:2001JAN12	70986990V1	1375	1588
30	LI:336872.1:2001JAN12	70983054V1	1076	1561
30	LI:336872.1:2001JAN12	6535837T8	1074	1504
30	LI:336872.1:2001JAN12	70985260V1	1076	1458
31	LI:1143291.1:2001JAN12	71568568V1	765	1287
31	LI:1143291.1:2001JAN12	71569363V1	770	1002
31	LI:1143291.1:2001JAN12	71571480V1	771	1002
31	LI:1143291.1:2001JAN12	71572931V1	778	1390
31	LI:1143291.1:2001JAN12	71228064V1	818	1333
31	LI:1143291.1:2001JAN12	71570836V1	828	1492
31	LI:1143291.1:2001JAN12	g1727418	844	1086
31	LI:1143291.1:2001JAN12	71227387V1	847	1377
31	LI:1143291.1:2001JAN12	70864247V1	848	1452
31	LI:1143291.1:2001JAN12	71573061V1	894	1518
31	LI:1143291.1:2001JAN12	2639294H1	895	1186
31	LI:1143291.1:2001JAN12	4957555H1	897	1195
31	LI:1143291.1:2001JAN12	70861696V1	903	1557
31	LI:1143291.1:2001JAN12	71569143V1	936	1629
31	LI:1143291.1:2001JAN12	71573232V1	924	1536
31	LI:1143291.1:2001JAN12	71556832V1	623	1034
31	LI:1143291.1:2001JAN12	7256767H1	632	1166
31	LI:1143291.1:2001JAN12	71573169V1	693	1501
31	LI:1143291.1:2001JAN12	6107631H1	672	996
31	LI:1143291.1:2001JAN12	71571503V1	682	1443
31	LI:1143291.1:2001JAN12	70864234V1	1148	1748
31	LI:1143291.1:2001JAN12	4825453H1	1156	1438
31	LI:1143291.1:2001JAN12	6577495H1	1184	1744
31	LI:1143291.1:2001JAN12	3559219H1	1118	1423
31	LI:1143291.1:2001JAN12	g1959565	529	978
31	LI:1143291.1:2001JAN12	7693774J2	528	1062
31	LI:1143291.1:2001JAN12	3181072H1	541	854
31	LI:1143291.1:2001JAN12	g1646925	52	386
31	LI:1143291.1:2001JAN12	2919186H1	34	312
31	LI:1143291.1:2001JAN12	6302587H1	1071	1420
31	LI:1143291.1:2001JAN12	71567814V1	1077	1215
31	LI:1143291.1:2001JAN12	g6986485	1076	1602
31	LI:1143291.1:2001JAN12	6177745H1	14	289
31	LI:1143291.1:2001JAN12	3367153H1	15	303
31	LI:1143291.1:2001JAN12	3358072H1	17	309
31	LI:1143291.1:2001JAN12	7454619H2	21	172
31	LI:1143291.1:2001JAN12	7660612H1	29	584
31	LI:1143291.1:2001JAN12	5078943H1	29	273
31	LI:1143291.1:2001JAN12	3218692H1	31	309

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
31	LI:1143291.1:2001JAN12	5823724H1	761	1067
31	LI:1143291.1:2001JAN12	5813906H1	761	1055
31	LI:1143291.1:2001JAN12	5822195H1	761	1023
31	LI:1143291.1:2001JAN12	5671865H1	762	1014
31	LI:1143291.1:2001JAN12	70862668V1	349	1018
31	LI:1143291.1:2001JAN12	5841142H2	363	621
31	LI:1143291.1:2001JAN12	6576191H1	380	939
31	LI:1143291.1:2001JAN12	71584209V1	503	1022
31	LI:1143291.1:2001JAN12	1964238H1	507	780
31	LI:1143291.1:2001JAN12	7693774H2	520	1077
31	LI:1143291.1:2001JAN12	3616116H1	13	239
31	LI:1143291.1:2001JAN12	71570943V1	1065	1489
31	LI:1143291.1:2001JAN12	71569378V1	1066	1685
31	LI:1143291.1:2001JAN12	5976418H1	302	936
31	LI:1143291.1:2001JAN12	71579838V1	69	365
31	LI:1143291.1:2001JAN12	3162081H1	70	357
31	LI:1143291.1:2001JAN12	7713321J2	236	784
31	LI:1143291.1:2001JAN12	7713321H1	238	748
31	LI:1143291.1:2001JAN12	2623213H1	293	556
31	LI:1143291.1:2001JAN12	71569804V1	761	1461
31	LI:1143291.1:2001JAN12	5816195H1	760	1087
31	LI:1143291.1:2001JAN12	5813708H1	761	1049
31	LI:1143291.1:2001JAN12	5822544H1	761	1088
31	LI:1143291.1:2001JAN12	5821985H1	761	1077
31	LI:1143291.1:2001JAN12	5820752H1	761	1078
31	LI:1143291.1:2001JAN12	5822272H1	761	1065
31	LI:1143291.1:2001JAN12	3784261H1	52	388
31	LI:1143291.1:2001JAN12	2122388H1	57	313
31	LI:1143291.1:2001JAN12	3325075H1	61	335
31	LI:1143291.1:2001JAN12	g1646340	64	407
31	LI:1143291.1:2001JAN12	g1716874	62	365
31	LI:1143291.1:2001JAN12	70864184V1	1035	1716
31	LI:1143291.1:2001JAN12	5204927H1	1039	1287
31	LI:1143291.1:2001JAN12	1435582H1	9	274
31	LI:1143291.1:2001JAN12	1435582F6	9	222
31	LI:1143291.1:2001JAN12	1996436H1	10	277
31	LI:1143291.1:2001JAN12	71570758V1	25	659
31	LI:1143291.1:2001JAN12	71568172V1	1000	1765
31	LI:1143291.1:2001JAN12	5117596H1	1003	1296
31	LI:1143291.1:2001JAN12	71571552V1	1017	1432
31	LI:1143291.1:2001JAN12	g4683816	1384	1838
31	LI:1143291.1:2001JAN12	71599455V1	6	251
31	LI:1143291.1:2001JAN12	3159575H1	8	297
31	LI:1143291.1:2001JAN12	71570462V1	6	675
31	LI:1143291.1:2001JAN12	3452451H1	1383	1654
31	LI:1143291.1:2001JAN12	g5886333	1371	1832
31	LI:1143291.1:2001JAN12	g7319714	1378	1839
31	LI:1143291.1:2001JAN12	g5914488	1380	1838
31	LI:1143291.1:2001JAN12	71227089V1	1000	1713

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
31	LI:1143291.1:2001JAN12	7940736H1	989	1535
31	LI:1143291.1:2001JAN12	2750732H1	987	1296
31	LI:1143291.1:2001JAN12	71568272V1	993	1786
31	LI:1143291.1:2001JAN12	6434421H1	6	140
31	LI:1143291.1:2001JAN12	2375430H1	6	261
31	LI:1143291.1:2001JAN12	71602077V1	8	251
31	LI:1143291.1:2001JAN12	5074561H1	976	1275
31	LI:1143291.1:2001JAN12	6060343H1	966	1407
31	LI:1143291.1:2001JAN12	6943579H1	979	1593
31	LI:1143291.1:2001JAN12	1606002H1	942	1188
31	LI:1143291.1:2001JAN12	6572923H1	959	1625
31	LI:1143291.1:2001JAN12	053906H1	1296	1514
31	LI:1143291.1:2001JAN12	1376659H1	1336	1567
31	LI:1143291.1:2001JAN12	g3958466	1337	1831
31	LI:1143291.1:2001JAN12	2995984H1	2	312
31	LI:1143291.1:2001JAN12	3217256H1	1	297
31	LI:1143291.1:2001JAN12	3286827H1	1	258
31	LI:1143291.1:2001JAN12	g434778	2	1836
31	LI:1143291.1:2001JAN12	1542658H1	45	273
31	LI:1143291.1:2001JAN12	g890770	1278	1561
31	LI:1143291.1:2001JAN12	7349954H1	937	1428
31	LI:1143291.1:2001JAN12	g7041591	1402	1832
31	LI:1143291.1:2001JAN12	2791222H1	1383	1693
31	LI:1143291.1:2001JAN12	g5596234	1408	1844
31	LI:1143291.1:2001JAN12	g3742166	1411	1846
31	LI:1143291.1:2001JAN12	71570339V1	710	1504
31	LI:1143291.1:2001JAN12	2313991H1	724	1014
31	LI:1143291.1:2001JAN12	71571527V1	728	1399
31	LI:1143291.1:2001JAN12	70863941V1	6	239
31	LI:1143291.1:2001JAN12	71602235V1	6	251
31	LI:1143291.1:2001JAN12	2476096H1	6	249
31	LI:1143291.1:2001JAN12	g889945	1267	1542
31	LI:1143291.1:2001JAN12	4398657H1	1267	1529
31	LI:1143291.1:2001JAN12	4857181H1	1267	1536
31	LI:1143291.1:2001JAN12	1856026F6	1258	1734
31	LI:1143291.1:2001JAN12	1856026H1	1258	1505
31	LI:1143291.1:2001JAN12	71567623V1	1266	1737
31	LI:1143291.1:2001JAN12	g4874929	1411	1838
31	LI:1143291.1:2001JAN12	5023967H1	1249	1546
31	LI:1143291.1:2001JAN12	2972319H1	1249	1553
31	LI:1143291.1:2001JAN12	2375430T6	1262	1788
31	LI:1143291.1:2001JAN12	4402168H1	588	855
31	LI:1143291.1:2001JAN12	3537279H1	609	899
31	LI:1143291.1:2001JAN12	1615137H1	623	853
31	LI:1143291.1:2001JAN12	71572628V1	558	1334
31	LI:1143291.1:2001JAN12	71558534V1	586	1085
31	LI:1143291.1:2001JAN12	2886349H1	545	846
31	LI:1143291.1:2001JAN12	71569663V1	546	648
31	LI:1143291.1:2001JAN12	2375430F6	6	350

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
31	LI:1143291.1:2001JAN12	3541264H1	4	181
31	LI:1143291.1:2001JAN12	3541804H1	4	112
31	LI:1143291.1:2001JAN12	8114012H1	8	658
31	LI:1143291.1:2001JAN12	984132H1	686	1004
31	LI:1143291.1:2001JAN12	g4333939	1425	1841
31	LI:1143291.1:2001JAN12	g2751759	1431	1672
31	LI:1143291.1:2001JAN12	g8365378	1435	1844
31	LI:1143291.1:2001JAN12	g4069554	1437	1836
31	LI:1143291.1:2001JAN12	5314985H1	1455	1720
31	LI:1143291.1:2001JAN12	g4762625	1451	1832
31	LI:1143291.1:2001JAN12	g5233045	1462	1848
31	LI:1143291.1:2001JAN12	g3870514	1464	1835
31	LI:1143291.1:2001JAN12	g1646926	1466	1844
31	LI:1143291.1:2001JAN12	g7154482	1469	1838
31	LI:1143291.1:2001JAN12	g888988	1485	1837
31	LI:1143291.1:2001JAN12	g2848889	1494	1839
31	LI:1143291.1:2001JAN12	g2336365	1499	1835
31	LI:1143291.1:2001JAN12	g4438632	1524	1832
31	LI:1143291.1:2001JAN12	g4598155	1531	1832
31	LI:1143291.1:2001JAN12	g4281669	1533	1834
31	LI:1143291.1:2001JAN12	g2552618	1534	1841
31	LI:1143291.1:2001JAN12	2156356H1	1546	1686
31	LI:1143291.1:2001JAN12	3406628H1	1552	1815
31	LI:1143291.1:2001JAN12	1693574F6	1561	1832
31	LI:1143291.1:2001JAN12	1693574H1	1561	1825
31	LI:1143291.1:2001JAN12	1693574T6	1564	1788
31	LI:1143291.1:2001JAN12	217117H1	1581	1797
31	LI:1143291.1:2001JAN12	g4190420	1598	1842
31	LI:1143291.1:2001JAN12	3534712H1	1633	1721
31	LI:1143291.1:2001JAN12	6847563H1	1634	1943
31	LI:1143291.1:2001JAN12	g4901424	1639	1797
31	LI:1143291.1:2001JAN12	2398575H1	1646	1834
31	LI:1143291.1:2001JAN12	2466666H1	1677	1834
31	LI:1143291.1:2001JAN12	g4373565	1681	1840
31	LI:1143291.1:2001JAN12	g890701	1691	1834
31	LI:1143291.1:2001JAN12	6848480T8	1741	1943
31	LI:1143291.1:2001JAN12	6848480F8	1767	1943
31	LI:1143291.1:2001JAN12	5137506H2	1764	1859
32	LI:093477.1:2001JAN12	55026983H1	1	620
32	LI:093477.1:2001JAN12	55026983J1	534	793
32	LI:093477.1:2001JAN12	4187505F8	684	1310
32	LI:093477.1:2001JAN12	4187505H1	684	798
32	LI:093477.1:2001JAN12	6064542T8	986	1348
32	LI:093477.1:2001JAN12	4187505T8	1070	1473
32	LI:093477.1:2001JAN12	g6701422	1085	1585
32	LI:093477.1:2001JAN12	g6992369	1085	1506
32	LI:093477.1:2001JAN12	4187505T9	1093	1473
32	LI:093477.1:2001JAN12	2721392H1	1292	1529
33	LI:222105.1:2001JAN12	5337431H1	2259	2485

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
33	LI:222105.1:2001JAN12	1649170H1	2259	2476
33	LI:222105.1:2001JAN12	1650457H1	2259	2378
33	LI:222105.1:2001JAN12	5268184H1	2276	2433
33	LI:222105.1:2001JAN12	6982245H1	1868	2476
33	LI:222105.1:2001JAN12	g4123872	2693	2928
33	LI:222105.1:2001JAN12	3607719H1	1828	1928
33	LI:222105.1:2001JAN12	8097469H1	871	1443
33	LI:222105.1:2001JAN12	6753975H1	885	1499
33	LI:222105.1:2001JAN12	625468H1	792	1032
33	LI:222105.1:2001JAN12	6983060H1	853	1402
33	LI:222105.1:2001JAN12	8113670H1	855	1469
33	LI:222105.1:2001JAN12	1374191H1	2866	2928
33	LI:222105.1:2001JAN12	3998619H1	2649	2778
33	LI:222105.1:2001JAN12	397834T6	2655	2885
33	LI:222105.1:2001JAN12	g5543498	2660	2928
33	LI:222105.1:2001JAN12	2856775H1	2672	2928
33	LI:222105.1:2001JAN12	462594H1	2685	2873
33	LI:222105.1:2001JAN12	3740888H1	2687	2901
33	LI:222105.1:2001JAN12	3364340H1	2688	2931
33	LI:222105.1:2001JAN12	7699633H1	678	1162
33	LI:222105.1:2001JAN12	g5445748	2791	2928
33	LI:222105.1:2001JAN12	g3230508	2860	2931
33	LI:222105.1:2001JAN12	5336032H1	2259	2477
33	LI:222105.1:2001JAN12	285132H1	1796	2005
33	LI:222105.1:2001JAN12	g4194131	2621	2931
33	LI:222105.1:2001JAN12	909685H1	2644	2928
33	LI:222105.1:2001JAN12	900923H1	2648	2913
33	LI:222105.1:2001JAN12	900922H1	2648	2890
33	LI:222105.1:2001JAN12	4302596H1	2649	2901
33	LI:222105.1:2001JAN12	3997210H1	2649	2804
33	LI:222105.1:2001JAN12	2648357H1	2597	2846
33	LI:222105.1:2001JAN12	1300340T6	2606	2889
33	LI:222105.1:2001JAN12	917086H1	1788	1971
33	LI:222105.1:2001JAN12	408689H1	1796	2058
33	LI:222105.1:2001JAN12	g2080434	2256	2716
33	LI:222105.1:2001JAN12	1842652R6	2247	2725
33	LI:222105.1:2001JAN12	1676867H1	2252	2463
33	LI:222105.1:2001JAN12	445738H1	2153	2430
33	LI:222105.1:2001JAN12	8193862H1	2165	2463
33	LI:222105.1:2001JAN12	2953417H1	2184	2483
33	LI:222105.1:2001JAN12	2925471H1	2208	2465
33	LI:222105.1:2001JAN12	715635H1	2174	2452
33	LI:222105.1:2001JAN12	717127H1	2174	2445
33	LI:222105.1:2001JAN12	1332387F6	2176	2522
33	LI:222105.1:2001JAN12	1402589H1	2176	2441
33	LI:222105.1:2001JAN12	818233H1	2211	2463
33	LI:222105.1:2001JAN12	6313074H1	2213	2463
33	LI:222105.1:2001JAN12	2443683H1	2227	2459
33	LI:222105.1:2001JAN12	1720394H1	2234	2457

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
33	LI:222105.1:2001JAN12	1842652H1	2247	2476
33	LI:222105.1:2001JAN12	3335135H1	567	739
33	LI:222105.1:2001JAN12	1756117H1	667	775
33	LI:222105.1:2001JAN12	2155703H1	672	875
33	LI:222105.1:2001JAN12	3239110H1	676	755
33	LI:222105.1:2001JAN12	g4665427	2740	2927
33	LI:222105.1:2001JAN12	g2036843	2741	2928
33	LI:222105.1:2001JAN12	1926455H1	2750	2928
33	LI:222105.1:2001JAN12	1926455R6	2750	2928
33	LI:222105.1:2001JAN12	1522791H1	2771	2928
33	LI:222105.1:2001JAN12	g1015246	2783	2916
33	LI:222105.1:2001JAN12	g1014231	2783	2928
33	LI:222105.1:2001JAN12	3149822H1	2787	2928
33	LI:222105.1:2001JAN12	3323427H1	562	831
33	LI:222105.1:2001JAN12	g3958413	2569	2677
33	LI:222105.1:2001JAN12	g2287807	2579	2928
33	LI:222105.1:2001JAN12	1300340F6	2579	2928
33	LI:222105.1:2001JAN12	1300340H1	2579	2831
33	LI:222105.1:2001JAN12	g2264076	2585	2928
33	LI:222105.1:2001JAN12	5504482H1	1751	1991
33	LI:222105.1:2001JAN12	341590H1	1756	2022
33	LI:222105.1:2001JAN12	378462H1	1756	1972
33	LI:222105.1:2001JAN12	1543868H1	1757	1969
33	LI:222105.1:2001JAN12	5924923H1	1788	2062
33	LI:222105.1:2001JAN12	2642319H1	505	710
33	LI:222105.1:2001JAN12	3771518H1	1732	2030
33	LI:222105.1:2001JAN12	2859109H1	1732	1935
33	LI:222105.1:2001JAN12	7354381H1	492	1084
33	LI:222105.1:2001JAN12	1926455T6	2739	2881
33	LI:222105.1:2001JAN12	5947131H1	2738	2931
33	LI:222105.1:2001JAN12	4072055H1	1710	1997
33	LI:222105.1:2001JAN12	8033408H1	1708	1855
33	LI:222105.1:2001JAN12	1211413R1	1710	2217
33	LI:222105.1:2001JAN12	1211413H1	1710	1975
33	LI:222105.1:2001JAN12	7762249J1	331	426
33	LI:222105.1:2001JAN12	7642129J1	470	783
33	LI:222105.1:2001JAN12	4306411H1	475	622
33	LI:222105.1:2001JAN12	7176225F8	320	438
33	LI:222105.1:2001JAN12	2571555H1	2714	2937
33	LI:222105.1:2001JAN12	g1955117	2716	2887
33	LI:222105.1:2001JAN12	g2432148	2731	2931
33	LI:222105.1:2001JAN12	4574566H1	2732	2929
33	LI:222105.1:2001JAN12	285455H1	2734	2928
33	LI:222105.1:2001JAN12	6854812H1	2714	2928
33	LI:222105.1:2001JAN12	4911394H1	2568	2835
33	LI:222105.1:2001JAN12	4500877H1	2570	2831
33	LI:222105.1:2001JAN12	g3959218	2558	2676
33	LI:222105.1:2001JAN12	2414524H1	2558	2665
33	LI:222105.1:2001JAN12	g2878154	2558	2722

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
33	LI:222105.1:2001JAN12	5305130H1	2041	2277
33	LI:222105.1:2001JAN12	1007852H1	2043	2342
33	LI:222105.1:2001JAN12	6529606H1	2048	2468
33	LI:222105.1:2001JAN12	5378309H1	2128	2389
33	LI:222105.1:2001JAN12	6350041H2	2050	2377
33	LI:222105.1:2001JAN12	6343875H1	2051	2322
33	LI:222105.1:2001JAN12	6350682H1	2051	2326
33	LI:222105.1:2001JAN12	3434235H1	2084	2327
33	LI:222105.1:2001JAN12	g3250400	2117	2298
33	LI:222105.1:2001JAN12	2430463H1	2117	2397
33	LI:222105.1:2001JAN12	512931H1	2153	2359
33	LI:222105.1:2001JAN12	g3421916	2127	2462
33	LI:222105.1:2001JAN12	7626196J1	2006	2477
33	LI:222105.1:2001JAN12	7701858H1	2006	2415
33	LI:222105.1:2001JAN12	7701858J2	2006	2123
33	LI:222105.1:2001JAN12	5550253H1	2022	2278
33	LI:222105.1:2001JAN12	916806H1	2026	2301
33	LI:222105.1:2001JAN12	2603907H1	1955	2212
33	LI:222105.1:2001JAN12	1386161H1	1974	2207
33	LI:222105.1:2001JAN12	1444911H1	1975	2241
33	LI:222105.1:2001JAN12	7120410H1	1685	1870
33	LI:222105.1:2001JAN12	7176225H1	320	441
33	LI:222105.1:2001JAN12	5921182H1	2707	2928
33	LI:222105.1:2001JAN12	983413T1	2707	2887
33	LI:222105.1:2001JAN12	2157952H1	2708	2933
33	LI:222105.1:2001JAN12	4069081H1	2708	2930
33	LI:222105.1:2001JAN12	810217H1	2710	2928
33	LI:222105.1:2001JAN12	900000H1	2711	2928
33	LI:222105.1:2001JAN12	900000T1	2711	2882
33	LI:222105.1:2001JAN12	900524H1	2711	2830
33	LI:222105.1:2001JAN12	2476377F6	1659	1949
33	LI:222105.1:2001JAN12	2476377H1	1659	1893
33	LI:222105.1:2001JAN12	7595853H1	1684	2120
33	LI:222105.1:2001JAN12	1789314H1	1650	1911
33	LI:222105.1:2001JAN12	476980H1	227	478
33	LI:222105.1:2001JAN12	7403149H1	256	438
33	LI:222105.1:2001JAN12	5198126H1	1893	2140
33	LI:222105.1:2001JAN12	4751130H1	1952	2240
33	LI:222105.1:2001JAN12	6803219J1	1387	1961
33	LI:222105.1:2001JAN12	6572119H1	1424	1728
33	LI:222105.1:2001JAN12	2918119H1	1426	1710
33	LI:222105.1:2001JAN12	2520896H1	1459	1703
33	LI:222105.1:2001JAN12	2187587H1	1483	1594
33	LI:222105.1:2001JAN12	2187433H1	1483	1599
33	LI:222105.1:2001JAN12	3280152H1	1492	1755
33	LI:222105.1:2001JAN12	8109305H1	1498	2140
33	LI:222105.1:2001JAN12	g3214187	1503	1859
33	LI:222105.1:2001JAN12	7740157H1	1502	2053
33	LI:222105.1:2001JAN12	g1970051	1503	1646

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
33	LI:222105.1:2001JAN12	3322816H1	1525	1801
33	LI:222105.1:2001JAN12	7283089H1	1557	2133
33	LI:222105.1:2001JAN12	1650438H1	1560	1740
33	LI:222105.1:2001JAN12	7386335H1	1	214
33	LI:222105.1:2001JAN12	8122932H1	59	383
33	LI:222105.1:2001JAN12	6356420F8	100	436
33	LI:222105.1:2001JAN12	2495754H1	115	348
33	LI:222105.1:2001JAN12	7469345H1	210	644
33	LI:222105.1:2001JAN12	7406641H1	1	353
33	LI:222105.1:2001JAN12	g2910345	1	57
33	LI:222105.1:2001JAN12	6753975J1	1	363
33	LI:222105.1:2001JAN12	g5848785	1	345
33	LI:222105.1:2001JAN12	g2080358	2557	2915
33	LI:222105.1:2001JAN12	6937583H1	2558	2756
33	LI:222105.1:2001JAN12	6803219H1	1887	2459
33	LI:222105.1:2001JAN12	3358989H1	1868	2098
33	LI:222105.1:2001JAN12	5134450H1	1870	2127
33	LI:222105.1:2001JAN12	2612419H1	1305	1582
33	LI:222105.1:2001JAN12	2112293H1	1359	1608
33	LI:222105.1:2001JAN12	2624024H1	2697	2928
33	LI:222105.1:2001JAN12	2548561H1	2697	2928
33	LI:222105.1:2001JAN12	3272683H1	2698	2928
33	LI:222105.1:2001JAN12	547730H1	2698	2928
33	LI:222105.1:2001JAN12	2888190H1	2701	2931
33	LI:222105.1:2001JAN12	1701864H1	2701	2897
33	LI:222105.1:2001JAN12	1417478H1	2705	2928
33	LI:222105.1:2001JAN12	983413H1	2707	2928
33	LI:222105.1:2001JAN12	056819H1	2695	2900
33	LI:222105.1:2001JAN12	2734088H1	2696	2929
33	LI:222105.1:2001JAN12	2761594H1	2697	2928
33	LI:222105.1:2001JAN12	7398940H1	1090	1641
33	LI:222105.1:2001JAN12	7398390H1	1092	1641
33	LI:222105.1:2001JAN12	7398401H1	1137	1641
33	LI:222105.1:2001JAN12	3597056H1	1177	1354
33	LI:222105.1:2001JAN12	7407244H1	1177	1410
33	LI:222105.1:2001JAN12	7699633J1	1202	1842
33	LI:222105.1:2001JAN12	6945777H1	1241	1603
33	LI:222105.1:2001JAN12	2763913H1	1242	1502
33	LI:222105.1:2001JAN12	7762249H1	1270	1693
33	LI:222105.1:2001JAN12	7703861H1	906	1433
33	LI:222105.1:2001JAN12	7397959H1	998	1641
33	LI:222105.1:2001JAN12	7100230H1	1026	1089
33	LI:222105.1:2001JAN12	g4176133	2548	2931
33	LI:222105.1:2001JAN12	g3230671	2548	2931
33	LI:222105.1:2001JAN12	g4874876	2548	2928
33	LI:222105.1:2001JAN12	g4453467	2548	2927
33	LI:222105.1:2001JAN12	g5671047	2548	2934
33	LI:222105.1:2001JAN12	g6085943	2548	2928
33	LI:222105.1:2001JAN12	g3002121	2548	2719

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
33	LI:222105.1:2001JAN12	805806H1	2548	2717
33	LI:222105.1:2001JAN12	g4188610	2548	2926
33	LI:222105.1:2001JAN12	777275R1	2554	2928
33	LI:222105.1:2001JAN12	777275H1	2554	2774
33	LI:222105.1:2001JAN12	7456830H1	2540	2753
33	LI:222105.1:2001JAN12	6272171H2	2540	2944
33	LI:222105.1:2001JAN12	5379306H1	2542	2702
33	LI:222105.1:2001JAN12	g4110835	2544	2928
33	LI:222105.1:2001JAN12	g4187376	2544	2931
33	LI:222105.1:2001JAN12	5375234H1	2546	2675
33	LI:222105.1:2001JAN12	g3693080	2547	2928
33	LI:222105.1:2001JAN12	079984H1	2547	2636
33	LI:222105.1:2001JAN12	g8364535	2548	2939
33	LI:222105.1:2001JAN12	2809175H1	2277	2470
33	LI:222105.1:2001JAN12	1957384H1	2280	2527
33	LI:222105.1:2001JAN12	916258H1	2286	2421
33	LI:222105.1:2001JAN12	1359150H1	2305	2463
33	LI:222105.1:2001JAN12	3838392H1	2366	2519
33	LI:222105.1:2001JAN12	2643055H1	2387	2476
33	LI:222105.1:2001JAN12	1842652T6	2468	2879
33	LI:222105.1:2001JAN12	4304712H1	2538	2814
33	LI:222105.1:2001JAN12	2292893H1	2694	2930
33	LI:222105.1:2001JAN12	2944459H1	2694	2913
34	LI:816737.2:2001JAN12	6396780H1	3207	3426
34	LI:816737.2:2001JAN12	2910364H1	3241	3498
34	LI:816737.2:2001JAN12	g1989191	1954	2341
34	LI:816737.2:2001JAN12	g4620385	2516	2700
34	LI:816737.2:2001JAN12	754388H1	3194	3450
34	LI:816737.2:2001JAN12	7041613H1	3199	3799
34	LI:816737.2:2001JAN12	6398585H1	3207	3488
34	LI:816737.2:2001JAN12	2105028H1	1951	2207
34	LI:816737.2:2001JAN12	g7151890	1926	2327
34	LI:816737.2:2001JAN12	g5526096	1921	2322
34	LI:816737.2:2001JAN12	6411534H1	1505	2054
34	LI:816737.2:2001JAN12	7618511H1	1513	2046
34	LI:816737.2:2001JAN12	4147335H1	1576	1891
34	LI:816737.2:2001JAN12	5540901H1	1633	1856
34	LI:816737.2:2001JAN12	2910019H1	1639	1928
34	LI:816737.2:2001JAN12	6410893H1	1645	1977
34	LI:816737.2:2001JAN12	8110880H1	1724	2324
34	LI:816737.2:2001JAN12	8024726J1	1774	2417
34	LI:816737.2:2001JAN12	7993975H1	1779	2348
34	LI:816737.2:2001JAN12	6592403H1	1799	2433
34	LI:816737.2:2001JAN12	7263053H1	1800	2347
34	LI:816737.2:2001JAN12	2911091H1	1803	2074
34	LI:816737.2:2001JAN12	2909285H1	1813	2093
34	LI:816737.2:2001JAN12	5730613H1	1887	2147
34	LI:816737.2:2001JAN12	g7236539	1897	2327
34	LI:816737.2:2001JAN12	g6199128	1899	2313

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
34	LI:816737.2:2001JAN12	g1897788	1168	1251
34	LI:816737.2:2001JAN12	2913215H1	3163	3431
34	LI:816737.2:2001JAN12	6411420H1	2506	3054
34	LI:816737.2:2001JAN12	7619120J1	2356	2964
34	LI:816737.2:2001JAN12	g7278272	2466	2704
34	LI:816737.2:2001JAN12	g4523480	2366	2782
34	LI:816737.2:2001JAN12	3925302H1	2474	2768
34	LI:816737.2:2001JAN12	g705891	2438	2744
34	LI:816737.2:2001JAN12	g7044021	2354	2702
34	LI:816737.2:2001JAN12	6408778H1	2321	2692
34	LI:816737.2:2001JAN12	6413215H1	2821	3304
34	LI:816737.2:2001JAN12	2864306H1	2852	3117
34	LI:816737.2:2001JAN12	2911451H1	2904	3108
34	LI:816737.2:2001JAN12	6408549H1	2908	3508
34	LI:816737.2:2001JAN12	6409975H1	2909	3394
34	LI:816737.2:2001JAN12	3483490H1	2927	3213
34	LI:816737.2:2001JAN12	6405529H1	2945	3294
34	LI:816737.2:2001JAN12	6412773F8	3040	3603
34	LI:816737.2:2001JAN12	6412373H1	3040	3583
34	LI:816737.2:2001JAN12	6410744H1	3048	3364
34	LI:816737.2:2001JAN12	6410835H1	3049	3373
34	LI:816737.2:2001JAN12	6405083H1	3082	3392
34	LI:816737.2:2001JAN12	6412125H1	3136	3359
34	LI:816737.2:2001JAN12	g7155152	2297	2700
34	LI:816737.2:2001JAN12	g4649002	2298	2700
34	LI:816737.2:2001JAN12	6412955H1	2302	2651
34	LI:816737.2:2001JAN12	6412113H1	2306	2531
34	LI:816737.2:2001JAN12	g4687483	2289	2701
34	LI:816737.2:2001JAN12	6569450H1	893	1250
34	LI:816737.2:2001JAN12	7745635H1	953	1562
34	LI:816737.2:2001JAN12	g1990041	960	1263
34	LI:816737.2:2001JAN12	2438542H1	1032	1251
34	LI:816737.2:2001JAN12	4028605H1	1036	1274
34	LI:816737.2:2001JAN12	2482252H1	1072	1275
34	LI:816737.2:2001JAN12	g2821510	1075	1261
34	LI:816737.2:2001JAN12	2849982H1	1074	1316
34	LI:816737.2:2001JAN12	473232H1	1115	1381
34	LI:816737.2:2001JAN12	055107H1	1119	1275
34	LI:816737.2:2001JAN12	g8366626	2291	2720
34	LI:816737.2:2001JAN12	8002348H1	73	561
34	LI:816737.2:2001JAN12	6410885H1	1209	1374
34	LI:816737.2:2001JAN12	7745635J1	71	780
34	LI:816737.2:2001JAN12	6607851H1	200	773
34	LI:816737.2:2001JAN12	7405526H1	271	737
34	LI:816737.2:2001JAN12	7330739H2	322	920
34	LI:816737.2:2001JAN12	7097242H1	380	896
34	LI:816737.2:2001JAN12	8009510H1	397	974
34	LI:816737.2:2001JAN12	g2824920	403	876
34	LI:816737.2:2001JAN12	g1773734	488	744

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
34	LI:816737.2:2001JAN12	7761381J1	513	1210
34	LI:816737.2:2001JAN12	8039937H1	545	1135
34	LI:816737.2:2001JAN12	6814120J1	549	1118
34	LI:816737.2:2001JAN12	491029H1	573	820
34	LI:816737.2:2001JAN12	2913440F6	598	793
34	LI:816737.2:2001JAN12	2913440H1	598	788
34	LI:816737.2:2001JAN12	6405792H1	604	887
34	LI:816737.2:2001JAN12	8128808H1	609	1203
34	LI:816737.2:2001JAN12	3597201H1	672	934
34	LI:816737.2:2001JAN12	g1938350	747	1812
34	LI:816737.2:2001JAN12	3860636H1	778	1059
34	LI:816737.2:2001JAN12	g4073794	794	1257
34	LI:816737.2:2001JAN12	g4690074	798	1257
34	LI:816737.2:2001JAN12	063048H1	815	1078
34	LI:816737.2:2001JAN12	062187H1	815	1019
34	LI:816737.2:2001JAN12	g2834686	822	1001
34	LI:816737.2:2001JAN12	g6986459	889	1257
34	LI:816737.2:2001JAN12	7640379J2	885	1498
34	LI:816737.2:2001JAN12	6569458H1	893	1259
34	LI:816737.2:2001JAN12	g4564324	893	1287
34	LI:816737.2:2001JAN12	7017071H1	27	82
34	LI:816737.2:2001JAN12	6394505H1	2228	2510
34	LI:816737.2:2001JAN12	506159H1	2260	2458
34	LI:816737.2:2001JAN12	2082320H1	2228	2486
34	LI:816737.2:2001JAN12	6411895H1	2257	2660
34	LI:816737.2:2001JAN12	2911182H1	2276	2551
34	LI:816737.2:2001JAN12	3482065H1	1378	1556
34	LI:816737.2:2001JAN12	7619120H1	1400	1911
34	LI:816737.2:2001JAN12	71293225V1	1444	2032
34	LI:816737.2:2001JAN12	6779803H1	28	545
34	LI:816737.2:2001JAN12	6413406H1	2123	2634
34	LI:816737.2:2001JAN12	485391T6	2192	2656
34	LI:816737.2:2001JAN12	2913440T6	2156	2657
34	LI:816737.2:2001JAN12	6402863F8	2189	2698
34	LI:816737.2:2001JAN12	486495T6	2193	2660
34	LI:816737.2:2001JAN12	g1989618	2196	2432
34	LI:816737.2:2001JAN12	8001194H1	1	272
34	LI:816737.2:2001JAN12	8118317H1	4	650
34	LI:816737.2:2001JAN12	7579530H1	13	621
34	LI:816737.2:2001JAN12	3225964H1	21	295
34	LI:816737.2:2001JAN12	3415931H1	1190	1434
34	LI:816737.2:2001JAN12	486494H1	1174	1377
34	LI:816737.2:2001JAN12	g2162759	1191	1313
34	LI:816737.2:2001JAN12	4721156H1	1201	1295
34	LI:816737.2:2001JAN12	689780H1	1214	1427
34	LI:816737.2:2001JAN12	8118734H1	77	604
34	LI:816737.2:2001JAN12	7412025H1	93	550
34	LI:816737.2:2001JAN12	7761381H1	111	743
34	LI:816737.2:2001JAN12	6814120H1	159	671

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
34	LI:816737.2:2001JAN12	7703677J1	162	587
34	LI:816737.2:2001JAN12	7703677H1	162	634
34	LI:816737.2:2001JAN12	8042881H1	173	618
34	LI:816737.2:2001JAN12	2745193H1	180	326
34	LI:816737.2:2001JAN12	6779803J1	185	631
34	LI:816737.2:2001JAN12	g1966591	197	793
34	LI:816737.2:2001JAN12	2910860H1	2518	2641
34	LI:816737.2:2001JAN12	g5746758	2538	2700
34	LI:816737.2:2001JAN12	2101769H1	2547	2803
34	LI:816737.2:2001JAN12	7586935H1	2563	3144
34	LI:816737.2:2001JAN12	2909278H1	2569	2700
34	LI:816737.2:2001JAN12	6413711H1	2594	2864
34	LI:816737.2:2001JAN12	g5511963	2601	3024
34	LI:816737.2:2001JAN12	g5514266	2629	3062
34	LI:816737.2:2001JAN12	2911782H1	2643	2932
34	LI:816737.2:2001JAN12	4149510H1	2699	3014
34	LI:816737.2:2001JAN12	6410684H1	2718	3076
34	LI:816737.2:2001JAN12	5308802H1	2754	2875
34	LI:816737.2:2001JAN12	g4685773	2768	3027
34	LI:816737.2:2001JAN12	2910551H1	2786	3077
34	LI:816737.2:2001JAN12	5308802F8	2800	3031
34	LI:816737.2:2001JAN12	6407061H1	2821	3285
34	LI:816737.2:2001JAN12	g1988622	2082	2298
34	LI:816737.2:2001JAN12	6411180H1	1991	2314
34	LI:816737.2:2001JAN12	760599R1	2114	2616
34	LI:816737.2:2001JAN12	2561638H1	2001	2283
34	LI:816737.2:2001JAN12	6414151H1	2001	2188
34	LI:816737.2:2001JAN12	7742741J1	2019	2550
34	LI:816737.2:2001JAN12	760599H1	2115	2281
34	LI:816737.2:2001JAN12	g6704512	2024	2277
34	LI:816737.2:2001JAN12	g4690363	2046	2327
34	LI:816737.2:2001JAN12	g1988942	1954	2189
34	LI:816737.2:2001JAN12	g1989158	1954	2239
34	LI:816737.2:2001JAN12	7364250H1	1974	2566
34	LI:816737.2:2001JAN12	6410621H1	1221	1417
34	LI:816737.2:2001JAN12	2476181H1	1238	1463
34	LI:816737.2:2001JAN12	6412149H1	1234	1452
34	LI:816737.2:2001JAN12	2912945H1	1235	1502
34	LI:816737.2:2001JAN12	8214171H1	1324	1744
34	LI:816737.2:2001JAN12	6405193H1	3262	3572
34	LI:816737.2:2001JAN12	2911786H1	3292	3586
34	LI:816737.2:2001JAN12	8036618J1	3310	3922
34	LI:816737.2:2001JAN12	5734088H1	3318	3566
34	LI:816737.2:2001JAN12	5308802T8	3345	3901
34	LI:816737.2:2001JAN12	7742741H1	3405	4001
34	LI:816737.2:2001JAN12	7618511J1	3428	4004
34	LI:816737.2:2001JAN12	8048034H1	3436	3883
34	LI:816737.2:2001JAN12	2909546H1	3448	3761
34	LI:816737.2:2001JAN12	g2215564	3454	3876

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
34	LI:816737.2:2001JAN12	g2215565	3454	3872
34	LI:816737.2:2001JAN12	6413539T8	3481	3777
34	LI:816737.2:2001JAN12	6405676H1	3468	3813
34	LI:816737.2:2001JAN12	2913622H1	3478	3789
34	LI:816737.2:2001JAN12	6405066H1	3508	3858
34	LI:816737.2:2001JAN12	6405427H1	3519	3838
34	LI:816737.2:2001JAN12	g5812022	3534	4004
34	LI:816737.2:2001JAN12	g4152956	3535	4009
34	LI:816737.2:2001JAN12	g6131578	3547	4005
34	LI:816737.2:2001JAN12	g5514011	3548	4006
34	LI:816737.2:2001JAN12	g5745092	3550	4006
34	LI:816737.2:2001JAN12	g4686340	3552	4007
34	LI:816737.2:2001JAN12	g6439632	3554	4005
34	LI:816737.2:2001JAN12	g6974548	3555	4006
34	LI:816737.2:2001JAN12	g5813412	3557	4011
34	LI:816737.2:2001JAN12	g6132473	3556	4012
34	LI:816737.2:2001JAN12	g5809786	3559	4006
34	LI:816737.2:2001JAN12	g4689811	3559	4004
34	LI:816737.2:2001JAN12	g7151306	3561	4007
34	LI:816737.2:2001JAN12	g5756405	3564	4008
34	LI:816737.2:2001JAN12	g4686448	3564	4005
34	LI:816737.2:2001JAN12	g4893955	3567	4015
34	LI:816737.2:2001JAN12	g7149609	3567	4004
34	LI:816737.2:2001JAN12	g5449282	3570	4016
34	LI:816737.2:2001JAN12	g7152102	3571	4004
34	LI:816737.2:2001JAN12	g6717020	3571	4016
34	LI:816737.2:2001JAN12	g5659222	3572	4006
34	LI:816737.2:2001JAN12	g7278346	3578	4007
34	LI:816737.2:2001JAN12	g6717025	3581	4016
34	LI:816737.2:2001JAN12	g4684499	3583	4007
34	LI:816737.2:2001JAN12	g7278755	3584	4004
34	LI:816737.2:2001JAN12	g7151017	3588	4004
34	LI:816737.2:2001JAN12	g4511422	3589	4013
34	LI:816737.2:2001JAN12	g5934056	3592	4011
34	LI:816737.2:2001JAN12	g4893667	3593	4016
34	LI:816737.2:2001JAN12	g7278274	3596	4020
34	LI:816737.2:2001JAN12	g5921043	3597	4039
34	LI:816737.2:2001JAN12	g3897030	3599	4004
34	LI:816737.2:2001JAN12	g4509460	3615	4004
34	LI:816737.2:2001JAN12	g7237085	3616	4018
34	LI:816737.2:2001JAN12	g7152153	3617	4007
34	LI:816737.2:2001JAN12	g5594138	3622	4004
34	LI:816737.2:2001JAN12	g5592293	3625	4024
34	LI:816737.2:2001JAN12	g5547640	3628	4018
34	LI:816737.2:2001JAN12	g6198177	3633	4020
34	LI:816737.2:2001JAN12	g3930854	3633	4004
34	LI:816737.2:2001JAN12	g678400	3637	4004
34	LI:816737.2:2001JAN12	g5747364	3640	4000
34	LI:816737.2:2001JAN12	g7155592	3654	4005

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
34	LI:816737.2:2001JAN12	g5511803	3675	4012
34	LI:816737.2:2001JAN12	g3895276	3676	4004
34	LI:816737.2:2001JAN12	5869284H1	3673	3937
34	LI:816737.2:2001JAN12	g765884	3701	4015
34	LI:816737.2:2001JAN12	g3897475	3716	4005
34	LI:816737.2:2001JAN12	g5445235	3716	4017
34	LI:816737.2:2001JAN12	g7236570	3764	4008
34	LI:816737.2:2001JAN12	g4525780	3771	4004
34	LI:816737.2:2001JAN12	g7278681	3779	4006
34	LI:816737.2:2001JAN12	g5591726	3847	4012
34	LI:816737.2:2001JAN12	2909963H1	3919	4016
34	LI:816737.2:2001JAN12	758872H1	3927	4016
35	LI:475524.1:2001JAN12	2825995H1	882	1164
35	LI:475524.1:2001JAN12	70283626V1	1042	1672
35	LI:475524.1:2001JAN12	71909108V1	894	1435
35	LI:475524.1:2001JAN12	g2011617	902	1278
35	LI:475524.1:2001JAN12	g2011254	902	1257
35	LI:475524.1:2001JAN12	g2011621	902	1243
35	LI:475524.1:2001JAN12	71900442V1	923	1128
35	LI:475524.1:2001JAN12	71913838V1	932	1282
35	LI:475524.1:2001JAN12	71913013V1	939	1425
35	LI:475524.1:2001JAN12	5286794T9	989	1442
35	LI:475524.1:2001JAN12	71837342V1	952	1133
35	LI:475524.1:2001JAN12	70284336V1	969	1534
35	LI:475524.1:2001JAN12	71835491V1	893	1113
35	LI:475524.1:2001JAN12	7378622H2	681	1042
35	LI:475524.1:2001JAN12	71908514V1	657	1176
35	LI:475524.1:2001JAN12	269072H1	169	557
35	LI:475524.1:2001JAN12	2417676F6	171	543
35	LI:475524.1:2001JAN12	71836773V1	174	760
35	LI:475524.1:2001JAN12	70287572V1	169	765
35	LI:475524.1:2001JAN12	2890678F6	169	772
35	LI:475524.1:2001JAN12	2890678H1	169	443
35	LI:475524.1:2001JAN12	6245461H1	1	511
35	LI:475524.1:2001JAN12	5286794H1	80	271
35	LI:475524.1:2001JAN12	5286794F8	83	636
35	LI:475524.1:2001JAN12	70283668V1	169	800
35	LI:475524.1:2001JAN12	70330714D1	876	1180
35	LI:475524.1:2001JAN12	2825995R6	882	1405
35	LI:475524.1:2001JAN12	70330394D1	1149	1529
35	LI:475524.1:2001JAN12	2417287H1	1151	1403
35	LI:475524.1:2001JAN12	2972436T6	1165	1620
35	LI:475524.1:2001JAN12	g5850845	1166	1675
35	LI:475524.1:2001JAN12	2417676T6	1172	1618
35	LI:475524.1:2001JAN12	g5837002	1181	1675
35	LI:475524.1:2001JAN12	70331494D1	1184	1530
35	LI:475524.1:2001JAN12	g4739261	1186	1666
35	LI:475524.1:2001JAN12	g6040428	1197	1676
35	LI:475524.1:2001JAN12	71910658V1	704	1420

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
35	LI:475524.1:2001JAN12	71912464V1	721	1074
35	LI:475524.1:2001JAN12	70331011D1	772	1113
35	LI:475524.1:2001JAN12	70331364D1	788	1239
35	LI:475524.1:2001JAN12	70330374D1	788	1113
35	LI:475524.1:2001JAN12	71909029V1	815	1319
35	LI:475524.1:2001JAN12	71908983V1	817	1449
35	LI:475524.1:2001JAN12	71904215V1	825	1132
35	LI:475524.1:2001JAN12	6854940H1	842	1500
35	LI:475524.1:2001JAN12	8042027J1	852	1436
35	LI:475524.1:2001JAN12	8042027H1	852	1419
35	LI:475524.1:2001JAN12	71908988V1	867	1405
35	LI:475524.1:2001JAN12	70332528D1	873	1524
35	LI:475524.1:2001JAN12	70332239D1	873	1148
35	LI:475524.1:2001JAN12	71835907V1	886	1197
35	LI:475524.1:2001JAN12	70287711V1	169	375
35	LI:475524.1:2001JAN12	70287644V1	169	375
35	LI:475524.1:2001JAN12	70285965V1	610	830
35	LI:475524.1:2001JAN12	71839758V1	621	837
35	LI:475524.1:2001JAN12	71836321V1	634	1287
35	LI:475524.1:2001JAN12	70286051V1	641	1269
35	LI:475524.1:2001JAN12	2777396H1	170	429
35	LI:475524.1:2001JAN12	2417676H1	171	423
35	LI:475524.1:2001JAN12	4400939H1	173	453
35	LI:475524.1:2001JAN12	4400939F8	173	741
35	LI:475524.1:2001JAN12	2078647H1	174	437
35	LI:475524.1:2001JAN12	2782041H1	178	446
35	LI:475524.1:2001JAN12	71914042V1	197	953
35	LI:475524.1:2001JAN12	3639112H1	213	492
35	LI:475524.1:2001JAN12	3639112F8	213	717
35	LI:475524.1:2001JAN12	71916583V1	265	491
35	LI:475524.1:2001JAN12	71839839V1	291	432
35	LI:475524.1:2001JAN12	71911695V1	301	1088
35	LI:475524.1:2001JAN12	71912757V1	324	972
35	LI:475524.1:2001JAN12	70283980V1	324	946
35	LI:475524.1:2001JAN12	70286638V1	348	423
35	LI:475524.1:2001JAN12	70331871D1	411	749
35	LI:475524.1:2001JAN12	71908544V1	441	1043
35	LI:475524.1:2001JAN12	70286471V1	446	1095
35	LI:475524.1:2001JAN12	71911546V1	470	1066
35	LI:475524.1:2001JAN12	70330636D1	472	878
35	LI:475524.1:2001JAN12	70286641V1	495	1091
35	LI:475524.1:2001JAN12	71911879V1	503	1019
35	LI:475524.1:2001JAN12	71835513V1	514	1394
35	LI:475524.1:2001JAN12	71911201V1	513	1018
35	LI:475524.1:2001JAN12	70330801D1	510	852
35	LI:475524.1:2001JAN12	70289695V1	531	902
35	LI:475524.1:2001JAN12	71909715V1	565	1185
35	LI:475524.1:2001JAN12	70287021V1	598	1231
35	LI:475524.1:2001JAN12	71908567V1	602	1307

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
35	LI:475524.1:2001JAN12	71909690V1	603	1378
35	LI:475524.1:2001JAN12	4402107F8	608	1215
35	LI:475524.1:2001JAN12	4402107H1	608	858
35	LI:475524.1:2001JAN12	3639112T9	1045	1346
35	LI:475524.1:2001JAN12	70329744D1	1149	1542
35	LI:475524.1:2001JAN12	70284959V1	1048	1551
35	LI:475524.1:2001JAN12	2825995T6	1075	1614
35	LI:475524.1:2001JAN12	70331759D1	1149	1542
35	LI:475524.1:2001JAN12	70284193V1	1092	1509
35	LI:475524.1:2001JAN12	1234684H1	1101	1407
35	LI:475524.1:2001JAN12	70286063V1	1116	1597
35	LI:475524.1:2001JAN12	4763439H1	1124	1406
35	LI:475524.1:2001JAN12	2417287F6	1151	1515
35	LI:475524.1:2001JAN12	70284906V1	1127	1698
35	LI:475524.1:2001JAN12	71835516V1	1141	1556
35	LI:475524.1:2001JAN12	5951943H1	1198	1514
35	LI:475524.1:2001JAN12	4000924H1	1199	1464
35	LI:475524.1:2001JAN12	70329942D1	1220	1542
35	LI:475524.1:2001JAN12	g5855014	1236	1666
35	LI:475524.1:2001JAN12	2417287T6	1242	1617
35	LI:475524.1:2001JAN12	70287141V1	1278	1664
35	LI:475524.1:2001JAN12	70278422V1	1304	1649
35	LI:475524.1:2001JAN12	71902622V1	1494	1653
35	LI:475524.1:2001JAN12	70282132V1	1354	1665
35	LI:475524.1:2001JAN12	70279417V1	1365	1514
35	LI:475524.1:2001JAN12	2890678T6	1383	1620
35	LI:475524.1:2001JAN12	70285679V1	1395	1658
35	LI:475524.1:2001JAN12	70277527V1	1431	1801
36	LI:383639.1:2001JAN12	70682346V1	405	1011
36	LI:383639.1:2001JAN12	70683125V1	406	1003
36	LI:383639.1:2001JAN12	7645332J1	2066	2531
36	LI:383639.1:2001JAN12	70683372V1	757	1419
36	LI:383639.1:2001JAN12	70680065V1	758	1438
36	LI:383639.1:2001JAN12	70683712V1	582	1095
36	LI:383639.1:2001JAN12	70684737V1	188	769
36	LI:383639.1:2001JAN12	70679850V1	189	769
36	LI:383639.1:2001JAN12	70682393V1	226	831
36	LI:383639.1:2001JAN12	70684930V1	309	820
36	LI:383639.1:2001JAN12	70684160V1	358	1014
36	LI:383639.1:2001JAN12	70684175V1	377	1056
36	LI:383639.1:2001JAN12	70679797V1	388	1025
36	LI:383639.1:2001JAN12	70684023V1	403	1022
36	LI:383639.1:2001JAN12	70683486V1	2027	2504
36	LI:383639.1:2001JAN12	2733058T6	1926	2476
36	LI:383639.1:2001JAN12	70683736V1	1972	2241
36	LI:383639.1:2001JAN12	6558258T8	1988	2409
36	LI:383639.1:2001JAN12	7741041J1	1988	2358
36	LI:383639.1:2001JAN12	70683390V1	2021	2654
36	LI:383639.1:2001JAN12	70683348V1	2025	2504

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
36	LI:383639.1:2001JAN12	70682373V1	486	1109
36	LI:383639.1:2001JAN12	7202070F8	490	1153
36	LI:383639.1:2001JAN12	70708649V1	540	721
36	LI:383639.1:2001JAN12	70679719V1	188	784
36	LI:383639.1:2001JAN12	70681944V1	1855	2327
36	LI:383639.1:2001JAN12	7741041H1	85	688
36	LI:383639.1:2001JAN12	5751880H1	4	384
36	LI:383639.1:2001JAN12	70682456V1	1430	1802
36	LI:383639.1:2001JAN12	70682994V1	1461	1795
36	LI:383639.1:2001JAN12	70684676V1	1619	2122
36	LI:383639.1:2001JAN12	70681954V1	1699	2326
36	LI:383639.1:2001JAN12	70684297V1	423	989
36	LI:383639.1:2001JAN12	70682426V1	1277	1737
36	LI:383639.1:2001JAN12	70682307V1	1296	1816
36	LI:383639.1:2001JAN12	70681033V1	1322	1817
36	LI:383639.1:2001JAN12	7202070R8	1	675
36	LI:383639.1:2001JAN12	70683142V1	1910	2521
36	LI:383639.1:2001JAN12	70685074V1	411	989
36	LI:383639.1:2001JAN12	70684926V1	1214	1361
36	LI:383639.1:2001JAN12	70681749V1	1228	1810
36	LI:383639.1:2001JAN12	70681557V1	1210	1810
36	LI:383639.1:2001JAN12	6558258F6	802	1441
36	LI:383639.1:2001JAN12	6558258F8	802	1454
36	LI:383639.1:2001JAN12	6558258H1	802	1209
36	LI:383639.1:2001JAN12	70684285V1	836	1356
36	LI:383639.1:2001JAN12	70684179V1	837	1473
36	LI:383639.1:2001JAN12	70680668V1	841	1367
36	LI:383639.1:2001JAN12	70682051V1	852	1513
36	LI:383639.1:2001JAN12	70681684V1	900	1137
36	LI:383639.1:2001JAN12	2836771H1	938	1198
36	LI:383639.1:2001JAN12	70684622V1	1008	1641
36	LI:383639.1:2001JAN12	70683326V1	1018	1503
36	LI:383639.1:2001JAN12	70684440V1	1046	1480
36	LI:383639.1:2001JAN12	70683925V1	1091	1613
36	LI:383639.1:2001JAN12	70684469V1	1099	1743
36	LI:383639.1:2001JAN12	70681264V1	1122	1764
36	LI:383639.1:2001JAN12	70681504V1	1197	1525
36	LI:383639.1:2001JAN12	70708848V1	540	742
36	LI:383639.1:2001JAN12	70680123V1	545	1195
36	LI:383639.1:2001JAN12	70682376V1	548	1134
36	LI:383639.1:2001JAN12	70683701V1	582	1095
36	LI:383639.1:2001JAN12	70679509V1	625	1272
36	LI:383639.1:2001JAN12	70684244V1	674	1321
36	LI:383639.1:2001JAN12	70682159V1	698	1342
36	LI:383639.1:2001JAN12	7202070H1	699	1153
36	LI:383639.1:2001JAN12	70682801V1	740	1264
36	LI:383639.1:2001JAN12	70685242V1	753	1169
36	LI:383639.1:2001JAN12	6740467H1	2124	2628
36	LI:383639.1:2001JAN12	6740467F6	2151	2549

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
36	LI:383639.1:2001JAN12	7645332H1	2246	2916
36	LI:383639.1:2001JAN12	6558258T6	2271	2342
36	LI:383639.1:2001JAN12	860487H1	2815	2891
37	LI:814346.1:2001JAN12	7668267H1	186	760
37	LI:814346.1:2001JAN12	7370451H1	192	819
37	LI:814346.1:2001JAN12	2836649F6	2310	2750
37	LI:814346.1:2001JAN12	g960192	2354	2569
37	LI:814346.1:2001JAN12	g711142	2410	2773
37	LI:814346.1:2001JAN12	71671661V1	1378	1476
37	LI:814346.1:2001JAN12	7610517H1	1485	2001
37	LI:814346.1:2001JAN12	71522964V1	778	1400
37	LI:814346.1:2001JAN12	7661510H1	165	763
37	LI:814346.1:2001JAN12	g6660058	1558	1995
37	LI:814346.1:2001JAN12	g6833878	1560	2003
37	LI:814346.1:2001JAN12	g8366667	1577	1995
37	LI:814346.1:2001JAN12	5906747T9	1599	1828
37	LI:814346.1:2001JAN12	4651526H1	1632	1908
37	LI:814346.1:2001JAN12	3202077H1	1645	1853
37	LI:814346.1:2001JAN12	71519771V1	1086	1482
37	LI:814346.1:2001JAN12	1845438H1	1087	1403
37	LI:814346.1:2001JAN12	1624939H1	1087	1250
37	LI:814346.1:2001JAN12	4863524H1	1091	1363
37	LI:814346.1:2001JAN12	4878403H1	1091	1310
37	LI:814346.1:2001JAN12	1419180H1	1093	1369
37	LI:814346.1:2001JAN12	71522180V1	754	1338
37	LI:814346.1:2001JAN12	7982261H1	162	772
37	LI:814346.1:2001JAN12	7402263H1	164	817
37	LI:814346.1:2001JAN12	8001571H1	165	777
37	LI:814346.1:2001JAN12	7981590H1	162	874
37	LI:814346.1:2001JAN12	7975645H2	118	683
37	LI:814346.1:2001JAN12	8121335H1	117	815
37	LI:814346.1:2001JAN12	2676446H1	1101	1364
37	LI:814346.1:2001JAN12	4183971H1	1101	1357
37	LI:814346.1:2001JAN12	1851347H1	1114	1383
37	LI:814346.1:2001JAN12	4425249H1	1114	1384
37	LI:814346.1:2001JAN12	3837556H1	1115	1255
37	LI:814346.1:2001JAN12	5782438H1	1118	1364
37	LI:814346.1:2001JAN12	2587855H1	1117	1312
37	LI:814346.1:2001JAN12	7670158H2	110	738
37	LI:814346.1:2001JAN12	7982118H1	118	740
37	LI:814346.1:2001JAN12	8102287H1	92	692
37	LI:814346.1:2001JAN12	7981205H1	93	740
37	LI:814346.1:2001JAN12	g1527347	1189	1400
37	LI:814346.1:2001JAN12	71522891V1	1275	1979
37	LI:814346.1:2001JAN12	g395419	1296	1643
37	LI:814346.1:2001JAN12	2816060H1	1337	1655
37	LI:814346.1:2001JAN12	5027671F9	1371	1489
37	LI:814346.1:2001JAN12	7431210H1	753	1374
37	LI:814346.1:2001JAN12	71673284V1	933	1470

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
37	LI:814346.1:2001JAN12	71524467V1	942	1456
37	LI:814346.1:2001JAN12	4246423F8	1013	1250
37	LI:814346.1:2001JAN12	4695902H1	1088	1341
37	LI:814346.1:2001JAN12	5699360H1	1082	1355
37	LI:814346.1:2001JAN12	71672312V1	828	1472
37	LI:814346.1:2001JAN12	8117248H1	1523	2010
37	LI:814346.1:2001JAN12	8031941J1	1532	1787
37	LI:814346.1:2001JAN12	g7237197	1545	1994
37	LI:814346.1:2001JAN12	g6660424	1550	1994
37	LI:814346.1:2001JAN12	4093018H1	1101	1395
37	LI:814346.1:2001JAN12	2637113H1	1096	1379
37	LI:814346.1:2001JAN12	3503076H1	1098	1405
37	LI:814346.1:2001JAN12	3908373H1	1099	1391
37	LI:814346.1:2001JAN12	4133423H2	1099	1387
37	LI:814346.1:2001JAN12	3908259H1	1099	1378
37	LI:814346.1:2001JAN12	3908287H1	1099	1372
37	LI:814346.1:2001JAN12	2112888H1	1100	1341
37	LI:814346.1:2001JAN12	7753585H1	1498	1991
37	LI:814346.1:2001JAN12	5000729H1	1171	1380
37	LI:814346.1:2001JAN12	2836649H1	2478	2750
37	LI:814346.1:2001JAN12	513685H1	1128	1349
37	LI:814346.1:2001JAN12	1719914H1	1130	1340
37	LI:814346.1:2001JAN12	2633807H1	1136	1273
37	LI:814346.1:2001JAN12	4729726H1	1156	1459
37	LI:814346.1:2001JAN12	71523539V1	868	1484
37	LI:814346.1:2001JAN12	71672563V1	924	1494
37	LI:814346.1:2001JAN12	384798H1	889	1168
37	LI:814346.1:2001JAN12	71520792V1	884	1568
37	LI:814346.1:2001JAN12	5433152T9	943	1238
37	LI:814346.1:2001JAN12	7408170H1	55	716
37	LI:814346.1:2001JAN12	7639063H1	67	626
37	LI:814346.1:2001JAN12	6199976H1	2141	2560
37	LI:814346.1:2001JAN12	3941047H1	2141	2421
37	LI:814346.1:2001JAN12	2395818H1	2226	2464
37	LI:814346.1:2001JAN12	g7703774	1646	1994
37	LI:814346.1:2001JAN12	g7155032	1656	1994
37	LI:814346.1:2001JAN12	7380647H1	1699	1964
37	LI:814346.1:2001JAN12	g7043267	1725	1994
37	LI:814346.1:2001JAN12	g7700997	1742	1994
37	LI:814346.1:2001JAN12	2395626H1	2228	2464
37	LI:814346.1:2001JAN12	2448338T6	1748	1945
37	LI:814346.1:2001JAN12	3950758T9	1765	1866
37	LI:814346.1:2001JAN12	2836649T6	1786	1943
37	LI:814346.1:2001JAN12	g2057262	2233	2643
37	LI:814346.1:2001JAN12	6542484H1	1857	2191
37	LI:814346.1:2001JAN12	2930772H2	1871	2151
37	LI:814346.1:2001JAN12	4931846H1	1900	1994
37	LI:814346.1:2001JAN12	2395818F6	1995	2464
37	LI:814346.1:2001JAN12	g4312220	1488	1937

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
37	LI:814346.1:2001JAN12	71524542V1	834	1474
37	LI:814346.1:2001JAN12	71672003V1	879	1472
37	LI:814346.1:2001JAN12	71523931V1	867	1623
37	LI:814346.1:2001JAN12	71523936V1	667	1270
37	LI:814346.1:2001JAN12	7585045H1	680	1356
37	LI:814346.1:2001JAN12	71522051V1	698	1259
37	LI:814346.1:2001JAN12	7610517J1	443	1077
37	LI:814346.1:2001JAN12	71520663V1	465	1210
37	LI:814346.1:2001JAN12	7364794H1	520	1017
37	LI:814346.1:2001JAN12	71525158V1	520	1192
37	LI:814346.1:2001JAN12	7949881H1	526	984
37	LI:814346.1:2001JAN12	71523094V1	572	1276
37	LI:814346.1:2001JAN12	71671633V1	591	1136
37	LI:814346.1:2001JAN12	7667223H1	592	1182
37	LI:814346.1:2001JAN12	7963229H1	592	1175
37	LI:814346.1:2001JAN12	71523086V1	621	1335
37	LI:814346.1:2001JAN12	71524503V1	632	991
37	LI:814346.1:2001JAN12	71521231V1	636	1421
37	LI:814346.1:2001JAN12	7628179J1	645	1348
37	LI:814346.1:2001JAN12	7740401J1	664	1452
37	LI:814346.1:2001JAN12	7999082H1	47	693
37	LI:814346.1:2001JAN12	71672067V1	420	996
37	LI:814346.1:2001JAN12	7963124H1	269	948
37	LI:814346.1:2001JAN12	7743714H1	418	1060
37	LI:814346.1:2001JAN12	71520818V1	18	646
37	LI:814346.1:2001JAN12	71522585V1	18	568
37	LI:814346.1:2001JAN12	7996882H1	34	695
37	LI:814346.1:2001JAN12	71519831V1	1	563
37	LI:814346.1:2001JAN12	8008976H1	1	618
37	LI:814346.1:2001JAN12	7975765H1	6	580
37	LI:814346.1:2001JAN12	7981760H1	12	553
37	LI:814346.1:2001JAN12	7981720H1	16	639
37	LI:814346.1:2001JAN12	7397042H1	264	797
37	LI:814346.1:2001JAN12	7396538H1	264	788
37	LI:814346.1:2001JAN12	7398567H1	264	910
37	LI:814346.1:2001JAN12	7398496H1	264	836
37	LI:814346.1:2001JAN12	7628179H1	214	787
37	LI:814346.1:2001JAN12	7609868J1	219	812
37	LI:814346.1:2001JAN12	7387449H1	192	701
37	LI:814346.1:2001JAN12	8025247J1	193	766
37	LI:814346.1:2001JAN12	7759220J1	194	841
37	LI:814346.1:2001JAN12	2735554H1	1093	1361
37	LI:814346.1:2001JAN12	1420930H1	1093	1338
37	LI:814346.1:2001JAN12	777482H1	1095	1340
38	LI:898195.6:2001JAN12	7940227H1	1392	2043
38	LI:898195.6:2001JAN12	71493013V1	1394	2030
38	LI:898195.6:2001JAN12	2722154H1	4154	4253
38	LI:898195.6:2001JAN12	2746967H1	3293	3556
38	LI:898195.6:2001JAN12	5560376H1	3319	3554

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
38	LI:898195.6:2001JAN12	5725732H1	3287	3856
38	LI:898195.6:2001JAN12	1255676H1	1832	2091
38	LI:898195.6:2001JAN12	71494017V1	1832	2383
38	LI:898195.6:2001JAN12	71493526V1	1832	2383
38	LI:898195.6:2001JAN12	71489864V1	1832	2542
38	LI:898195.6:2001JAN12	71490042V1	1805	2392
38	LI:898195.6:2001JAN12	6532213H1	1429	2103
38	LI:898195.6:2001JAN12	2318591H1	4059	4262
38	LI:898195.6:2001JAN12	2318591T6	4059	4223
38	LI:898195.6:2001JAN12	4464083H1	4076	4251
38	LI:898195.6:2001JAN12	2722154T6	4147	4216
38	LI:898195.6:2001JAN12	2318591R6	4059	4262
38	LI:898195.6:2001JAN12	5725624H1	3287	3901
38	LI:898195.6:2001JAN12	2538423H1	3277	3464
38	LI:898195.6:2001JAN12	71493831V1	2379	3004
38	LI:898195.6:2001JAN12	71489870V1	2371	3127
38	LI:898195.6:2001JAN12	7075767H1	1784	2335
38	LI:898195.6:2001JAN12	3814857H1	3277	3530
38	LI:898195.6:2001JAN12	g1319137	2725	3256
38	LI:898195.6:2001JAN12	909186H1	2668	2896
38	LI:898195.6:2001JAN12	4995243T9	2695	3153
38	LI:898195.6:2001JAN12	71493631V1	2685	3250
38	LI:898195.6:2001JAN12	71490430V1	1379	2115
38	LI:898195.6:2001JAN12	2269233H1	4039	4238
38	LI:898195.6:2001JAN12	2278423H1	4048	4318
38	LI:898195.6:2001JAN12	850139T6	4015	4335
38	LI:898195.6:2001JAN12	4204612H1	3268	3570
38	LI:898195.6:2001JAN12	4972615H1	3263	3555
38	LI:898195.6:2001JAN12	7748961H1	3181	3735
38	LI:898195.6:2001JAN12	g1201165	3251	3510
38	LI:898195.6:2001JAN12	4972491H1	3264	3554
38	LI:898195.6:2001JAN12	850139R6	3146	3372
38	LI:898195.6:2001JAN12	71490015V1	1375	1994
38	LI:898195.6:2001JAN12	70539842V1	1361	2008
38	LI:898195.6:2001JAN12	g2878100	3994	4405
38	LI:898195.6:2001JAN12	2268212H1	3139	3408
38	LI:898195.6:2001JAN12	2268285H1	3139	3399
38	LI:898195.6:2001JAN12	850139H1	3146	3332
38	LI:898195.6:2001JAN12	g823068	2671	3004
38	LI:898195.6:2001JAN12	3983539T6	2668	3226
38	LI:898195.6:2001JAN12	1495736H1	2668	2917
38	LI:898195.6:2001JAN12	71492961V1	2088	2733
38	LI:898195.6:2001JAN12	2268285R6	3139	3577
38	LI:898195.6:2001JAN12	71489542V1	1762	2347
38	LI:898195.6:2001JAN12	71489909V1	1345	1980
38	LI:898195.6:2001JAN12	71489910V1	1350	1947
38	LI:898195.6:2001JAN12	3622989H1	3958	4251
38	LI:898195.6:2001JAN12	g3430146	3972	4381
38	LI:898195.6:2001JAN12	g2115030	3993	4380

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
38	LI:898195.6:2001JAN12	g6472938	2655	2996
38	LI:898195.6:2001JAN12	g2229530	3950	4262
38	LI:898195.6:2001JAN12	4043165H1	3077	3243
38	LI:898195.6:2001JAN12	6286950H2	3100	3667
38	LI:898195.6:2001JAN12	218893H1	3130	3365
38	LI:898195.6:2001JAN12	2616038H1	3016	3242
38	LI:898195.6:2001JAN12	4570890H1	3052	3250
38	LI:898195.6:2001JAN12	71490796V1	2087	2750
38	LI:898195.6:2001JAN12	g1148373	3918	4238
38	LI:898195.6:2001JAN12	g5541266	3932	4256
38	LI:898195.6:2001JAN12	g5663591	3895	4377
38	LI:898195.6:2001JAN12	g4264588	2964	3250
38	LI:898195.6:2001JAN12	7033996H1	3007	3598
38	LI:898195.6:2001JAN12	1711980H1	2963	3194
38	LI:898195.6:2001JAN12	6918253H1	2655	3175
38	LI:898195.6:2001JAN12	g6474994	3891	4378
38	LI:898195.6:2001JAN12	71493906V1	2644	3250
38	LI:898195.6:2001JAN12	g6047753	2628	2996
38	LI:898195.6:2001JAN12	2447382F6	2628	3092
38	LI:898195.6:2001JAN12	2447382H1	2628	2864
38	LI:898195.6:2001JAN12	71491219V1	1642	2338
38	LI:898195.6:2001JAN12	4356674H1	1676	1815
38	LI:898195.6:2001JAN12	71514685V1	1736	2137
38	LI:898195.6:2001JAN12	71495018V1	1746	2480
38	LI:898195.6:2001JAN12	71493340V1	1753	2482
38	LI:898195.6:2001JAN12	110706R6	1751	2381
38	LI:898195.6:2001JAN12	6860682H1	1758	2285
38	LI:898195.6:2001JAN12	60208534U1	1756	2264
38	LI:898195.6:2001JAN12	60210281U2	1756	2264
38	LI:898195.6:2001JAN12	7447963T2	3863	4275
38	LI:898195.6:2001JAN12	1711980F6	2963	3503
38	LI:898195.6:2001JAN12	728574T6	2611	3203
38	LI:898195.6:2001JAN12	71491947V1	1332	2077
38	LI:898195.6:2001JAN12	g4329755	2947	3354
38	LI:898195.6:2001JAN12	g4308505	2594	3005
38	LI:898195.6:2001JAN12	3386565H1	2604	2769
38	LI:898195.6:2001JAN12	6466260H1	2611	3141
38	LI:898195.6:2001JAN12	6702126H1	1536	1671
38	LI:898195.6:2001JAN12	7055263H1	1569	2181
38	LI:898195.6:2001JAN12	71492674V1	1586	2247
38	LI:898195.6:2001JAN12	71491332V1	1600	2318
38	LI:898195.6:2001JAN12	71494832V1	1605	2259
38	LI:898195.6:2001JAN12	71495440V1	1550	2100
38	LI:898195.6:2001JAN12	2571272H1	2591	2851
38	LI:898195.6:2001JAN12	g3920068	2590	2996
38	LI:898195.6:2001JAN12	71490723V1	2082	2749
38	LI:898195.6:2001JAN12	71490472V1	1331	1961
38	LI:898195.6:2001JAN12	71492182V1	1336	1894
38	LI:898195.6:2001JAN12	71494843V1	1348	1999

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
38	LI:898195.6:2001JAN12	6610413T2	2868	3183
38	LI:898195.6:2001JAN12	71493130V1	2095	2840
38	LI:898195.6:2001JAN12	71489915V1	1506	1950
38	LI:898195.6:2001JAN12	71494638V1	1317	2139
38	LI:898195.6:2001JAN12	71491632V1	1254	2040
38	LI:898195.6:2001JAN12	7196285H1	1259	1756
38	LI:898195.6:2001JAN12	71490973V1	1272	1981
38	LI:898195.6:2001JAN12	71494231V1	1283	1922
38	LI:898195.6:2001JAN12	70533396V1	1309	1708
38	LI:898195.6:2001JAN12	71493328V1	1332	2125
38	LI:898195.6:2001JAN12	6533967H1	2589	2888
38	LI:898195.6:2001JAN12	7159246H1	621	1181
38	LI:898195.6:2001JAN12	5617155R6	628	829
38	LI:898195.6:2001JAN12	5547413H1	631	718
38	LI:898195.6:2001JAN12	71492138V1	631	1174
38	LI:898195.6:2001JAN12	g766423	643	934
38	LI:898195.6:2001JAN12	4995243H1	653	914
38	LI:898195.6:2001JAN12	4995243F9	671	1280
38	LI:898195.6:2001JAN12	71503002V1	700	887
38	LI:898195.6:2001JAN12	2408642H1	737	958
38	LI:898195.6:2001JAN12	71493077V1	811	1434
38	LI:898195.6:2001JAN12	7444781T2	819	1344
38	LI:898195.6:2001JAN12	71490327V1	938	1428
38	LI:898195.6:2001JAN12	6973635H1	959	1574
38	LI:898195.6:2001JAN12	7037377H1	980	1596
38	LI:898195.6:2001JAN12	71494208V1	1041	1789
38	LI:898195.6:2001JAN12	71495382V1	1067	1692
38	LI:898195.6:2001JAN12	71490356V1	1086	1861
38	LI:898195.6:2001JAN12	5369675H1	1092	1339
38	LI:898195.6:2001JAN12	71491107V1	1111	1917
38	LI:898195.6:2001JAN12	g2207950	1155	1682
38	LI:898195.6:2001JAN12	71504614V1	1214	1929
38	LI:898195.6:2001JAN12	7591984H1	1196	1844
38	LI:898195.6:2001JAN12	71504314V1	1249	1930
38	LI:898195.6:2001JAN12	71489617V1	1227	2008
38	LI:898195.6:2001JAN12	71492957V1	1240	2042
38	LI:898195.6:2001JAN12	71507314V1	1248	1930
38	LI:898195.6:2001JAN12	g1948998	597	886
38	LI:898195.6:2001JAN12	6619702H1	598	1202
38	LI:898195.6:2001JAN12	5617155R8	625	829
38	LI:898195.6:2001JAN12	2749245H1	3849	4126
38	LI:898195.6:2001JAN12	4511284H1	3851	4141
38	LI:898195.6:2001JAN12	2268285T6	3824	4217
38	LI:898195.6:2001JAN12	6933855H1	2108	2711
38	LI:898195.6:2001JAN12	71493386V1	2077	2473
38	LI:898195.6:2001JAN12	2671118F6	591	1165
38	LI:898195.6:2001JAN12	3629862H1	591	882
38	LI:898195.6:2001JAN12	2671118H1	591	850
38	LI:898195.6:2001JAN12	71490246V1	2815	3378

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
38	LI:898195.6:2001JAN12	2298219H1	2815	3073
38	LI:898195.6:2001JAN12	g3593805	2523	3001
38	LI:898195.6:2001JAN12	g2207851	2554	2995
38	LI:898195.6:2001JAN12	g3593268	2571	3003
38	LI:898195.6:2001JAN12	71491946V1	2077	2828
38	LI:898195.6:2001JAN12	g2007104	578	942
38	LI:898195.6:2001JAN12	g4650843	578	2996
38	LI:898195.6:2001JAN12	7255387H1	561	1147
38	LI:898195.6:2001JAN12	g7022682	562	2996
38	LI:898195.6:2001JAN12	1987775H1	563	762
38	LI:898195.6:2001JAN12	8125276H1	522	1147
38	LI:898195.6:2001JAN12	7997854H1	525	1114
38	LI:898195.6:2001JAN12	4179939H1	539	774
38	LI:898195.6:2001JAN12	8003770H1	541	1146
38	LI:898195.6:2001JAN12	7994210H1	503	1088
38	LI:898195.6:2001JAN12	7267059H2	502	1062
38	LI:898195.6:2001JAN12	8116748H1	512	1121
38	LI:898195.6:2001JAN12	8133184H1	511	1160
38	LI:898195.6:2001JAN12	6349561H2	518	868
38	LI:898195.6:2001JAN12	71491559V1	473	868
38	LI:898195.6:2001JAN12	3983539F6	474	856
38	LI:898195.6:2001JAN12	3983539H1	474	691
38	LI:898195.6:2001JAN12	71513785V1	474	672
38	LI:898195.6:2001JAN12	71493903V1	474	1000
38	LI:898195.6:2001JAN12	71495030V1	474	988
38	LI:898195.6:2001JAN12	5649669H1	3713	3947
38	LI:898195.6:2001JAN12	7451851T1	3750	4266
38	LI:898195.6:2001JAN12	g5394901	3758	4241
38	LI:898195.6:2001JAN12	2405018H1	3784	4019
38	LI:898195.6:2001JAN12	g7038644	2800	3250
38	LI:898195.6:2001JAN12	2088126H1	2516	2778
38	LI:898195.6:2001JAN12	71489807V1	2053	2766
38	LI:898195.6:2001JAN12	71491508V1	1536	2373
38	LI:898195.6:2001JAN12	3786850H1	3692	3931
38	LI:898195.6:2001JAN12	3116845H1	2788	3096
38	LI:898195.6:2001JAN12	4760765H1	2790	3108
38	LI:898195.6:2001JAN12	3112816T6	2774	3210
38	LI:898195.6:2001JAN12	71491496V1	2043	2815
38	LI:898195.6:2001JAN12	5544139H1	1467	1627
38	LI:898195.6:2001JAN12	6531363H1	1513	1891
38	LI:898195.6:2001JAN12	71494444V1	1500	2116
38	LI:898195.6:2001JAN12	71493302V1	474	1120
38	LI:898195.6:2001JAN12	6377935H1	2765	3054
38	LI:898195.6:2001JAN12	70538653V1	1993	2494
38	LI:898195.6:2001JAN12	71494757V1	1992	2782
38	LI:898195.6:2001JAN12	7162193H1	2011	2614
38	LI:898195.6:2001JAN12	g1993262	2012	2449
38	LI:898195.6:2001JAN12	71489883V1	2016	2645
38	LI:898195.6:2001JAN12	71493184V1	2045	2673

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
38	LI:898195.6:2001JAN12	71492658V1	1984	2624
38	LI:898195.6:2001JAN12	71492344V1	1465	2115
38	LI:898195.6:2001JAN12	71492153V1	474	1114
38	LI:898195.6:2001JAN12	g2216813	3690	4096
38	LI:898195.6:2001JAN12	3886194H1	3659	3913
38	LI:898195.6:2001JAN12	1403832H1	3675	3945
38	LI:898195.6:2001JAN12	71494313V1	1938	2701
38	LI:898195.6:2001JAN12	6584035H1	43	630
38	LI:898195.6:2001JAN12	5645518H1	464	740
38	LI:898195.6:2001JAN12	g5112262	2765	3250
38	LI:898195.6:2001JAN12	60208536U1	2513	2996
38	LI:898195.6:2001JAN12	71495479V1	2462	2994
38	LI:898195.6:2001JAN12	7041488H1	2493	3093
38	LI:898195.6:2001JAN12	g5755441	2509	3000
38	LI:898195.6:2001JAN12	995180H1	1844	2101
38	LI:898195.6:2001JAN12	71493412V1	1854	2504
38	LI:898195.6:2001JAN12	7637472H1	1862	2350
38	LI:898195.6:2001JAN12	2303263H1	1879	2159
38	LI:898195.6:2001JAN12	71492496V1	1886	2391
38	LI:898195.6:2001JAN12	71492871V1	1900	2680
38	LI:898195.6:2001JAN12	71490023V1	1899	2582
38	LI:898195.6:2001JAN12	71495435V1	1901	2608
38	LI:898195.6:2001JAN12	71492029V1	1912	2709
38	LI:898195.6:2001JAN12	71503961V1	1926	2352
38	LI:898195.6:2001JAN12	71491939V1	1914	2710
38	LI:898195.6:2001JAN12	6355207H1	1920	2250
38	LI:898195.6:2001JAN12	995015R1	1844	2118
38	LI:898195.6:2001JAN12	995188H1	1844	2100
38	LI:898195.6:2001JAN12	71492712V1	1833	2509
38	LI:898195.6:2001JAN12	6610413H2	1876	2444
38	LI:898195.6:2001JAN12	3625291H1	3659	3930
38	LI:898195.6:2001JAN12	7445377T1	3589	4132
38	LI:898195.6:2001JAN12	g4438704	2758	2997
38	LI:898195.6:2001JAN12	3723637H1	2447	2739
38	LI:898195.6:2001JAN12	71518506V1	2460	2666
38	LI:898195.6:2001JAN12	6587005H1	2348	2896
38	LI:898195.6:2001JAN12	728574H1	2326	2567
38	LI:898195.6:2001JAN12	728574R6	2325	2737
38	LI:898195.6:2001JAN12	71492930V1	1428	2014
38	LI:898195.6:2001JAN12	71491594V1	1428	2015
38	LI:898195.6:2001JAN12	71495469V1	1448	2116
38	LI:898195.6:2001JAN12	71518483V1	1447	1809
38	LI:898195.6:2001JAN12	5046976H1	1	267
38	LI:898195.6:2001JAN12	7367170H1	9	408
38	LI:898195.6:2001JAN12	523396H1	3333	3578
38	LI:898195.6:2001JAN12	g2229528	3342	3748
38	LI:898195.6:2001JAN12	2679381H1	3345	3671
38	LI:898195.6:2001JAN12	g2115320	3377	3784
38	LI:898195.6:2001JAN12	2279854H1	3464	3736

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
38	LI:898195.6:2001JAN12	772531H1	3475	3755
38	LI:898195.6:2001JAN12	4826651H1	3506	3764
38	LI:898195.6:2001JAN12	1784781H1	3517	3736
38	LI:898195.6:2001JAN12	4721426H1	3526	3802
38	LI:898195.6:2001JAN12	5167963H1	3529	3618
38	LI:898195.6:2001JAN12	2754913H1	3542	3807
38	LI:898195.6:2001JAN12	7027158H1	2751	3250
38	LI:898195.6:2001JAN12	g795429	2757	2996
38	LI:898195.6:2001JAN12	2447382T6	2723	3250
38	LI:898195.6:2001JAN12	4712875H1	2720	2981
38	LI:898195.6:2001JAN12	743887T6	2725	3204
38	LI:898195.6:2001JAN12	5600615H1	2721	2996
38	LI:898195.6:2001JAN12	2671118T6	2443	2956
38	LI:898195.6:2001JAN12	71505439V1	2406	2842
38	LI:898195.6:2001JAN12	2909248H1	2408	2617
38	LI:898195.6:2001JAN12	4656934H1	2422	2646
38	LI:898195.6:2001JAN12	3110269F6	2145	2493
38	LI:898195.6:2001JAN12	3110269H1	2146	2458
38	LI:898195.6:2001JAN12	g1319256	2145	2736
38	LI:898195.6:2001JAN12	g827697	2195	2495
38	LI:898195.6:2001JAN12	71492270V1	2221	2983
38	LI:898195.6:2001JAN12	71495453V1	2253	2933
38	LI:898195.6:2001JAN12	3251857H1	2254	2598
38	LI:898195.6:2001JAN12	71492005V1	2255	2840
38	LI:898195.6:2001JAN12	71493164V1	2259	2695
38	LI:898195.6:2001JAN12	71489641V1	2284	2994
38	LI:898195.6:2001JAN12	71491634V1	2305	2677
38	LI:898195.6:2001JAN12	71492036V1	2307	3081
38	LI:898195.6:2001JAN12	4976428H1	2317	2587
38	LI:898195.6:2001JAN12	71495122V1	2324	2574
38	LI:898195.6:2001JAN12	71490407V1	2331	3065
38	LI:898195.6:2001JAN12	71493706V1	2089	2628
38	LI:898195.6:2001JAN12	71492686V1	2135	2893
38	LI:898195.6:2001JAN12	71493381V1	2141	2840
38	LI:898195.6:2001JAN12	71493965V1	1406	2052
38	LI:898195.6:2001JAN12	71494883V1	1423	2052
38	LI:898195.6:2001JAN12	2722154F6	4154	4253
38	LI:898195.6:2001JAN12	g2881456	4176	4384
38	LI:898195.6:2001JAN12	g2216716	4207	4379
39	LI:210497.2:2001JAN12	4741947F8	1	417
39	LI:210497.2:2001JAN12	4741947H1	1	279
40	LI:110297.4:2001JAN12	70786692V1	1157	1753
40	LI:110297.4:2001JAN12	2856676H1	951	1243
40	LI:110297.4:2001JAN12	70648923V1	961	1555
40	LI:110297.4:2001JAN12	70783945V1	565	995
40	LI:110297.4:2001JAN12	70781901V1	565	1024
40	LI:110297.4:2001JAN12	4671416H1	1868	2110
40	LI:110297.4:2001JAN12	2913921H1	1898	2157
40	LI:110297.4:2001JAN12	g1164230	1545	1861

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
40	LI:110297.4:2001JAN12	2689635H1	1577	1823
40	LI:110297.4:2001JAN12	4116764H1	1391	1517
40	LI:110297.4:2001JAN12	70023942D1	1311	1860
40	LI:110297.4:2001JAN12	70029139D1	1311	1843
40	LI:110297.4:2001JAN12	5600036H1	1319	1841
40	LI:110297.4:2001JAN12	70782999V1	1186	1706
40	LI:110297.4:2001JAN12	70783823V1	1265	1863
40	LI:110297.4:2001JAN12	g1165659	1285	1555
40	LI:110297.4:2001JAN12	g2206862	1302	1801
40	LI:110297.4:2001JAN12	70783080V1	948	1503
40	LI:110297.4:2001JAN12	2104414H1	1566	1853
40	LI:110297.4:2001JAN12	4520010H1	323	570
40	LI:110297.4:2001JAN12	3983764F6	82	369
40	LI:110297.4:2001JAN12	3983764H1	82	384
40	LI:110297.4:2001JAN12	7995279H1	162	721
40	LI:110297.4:2001JAN12	3029528H1	193	458
40	LI:110297.4:2001JAN12	70784202V1	565	1192
40	LI:110297.4:2001JAN12	724533R7	565	1108
40	LI:110297.4:2001JAN12	70785603V1	565	1066
40	LI:110297.4:2001JAN12	70785643V1	565	1033
40	LI:110297.4:2001JAN12	70026552D1	1588	2072
40	LI:110297.4:2001JAN12	3742365H1	1593	1846
40	LI:110297.4:2001JAN12	1462519H1	1612	1858
40	LI:110297.4:2001JAN12	7726316J1	1022	1687
40	LI:110297.4:2001JAN12	70782675V1	1053	1702
40	LI:110297.4:2001JAN12	g1925661	1133	1519
40	LI:110297.4:2001JAN12	70025407D1	1907	2215
40	LI:110297.4:2001JAN12	70029342D1	1907	2215
40	LI:110297.4:2001JAN12	70029258D1	1907	2214
40	LI:110297.4:2001JAN12	g2206464	1913	2086
40	LI:110297.4:2001JAN12	g3674744	1920	2086
40	LI:110297.4:2001JAN12	724533T7	1941	2429
40	LI:110297.4:2001JAN12	70781763V1	948	1589
40	LI:110297.4:2001JAN12	3449854H1	951	1207
40	LI:110297.4:2001JAN12	3449854R6	951	1538
40	LI:110297.4:2001JAN12	2856676F6	951	1442
40	LI:110297.4:2001JAN12	70027082D1	951	1395
40	LI:110297.4:2001JAN12	70783970V1	1153	1790
40	LI:110297.4:2001JAN12	3449854T6	1941	2422
40	LI:110297.4:2001JAN12	70783020V1	967	1571
40	LI:110297.4:2001JAN12	5753034H1	699	1210
40	LI:110297.4:2001JAN12	70782038V1	565	1079
40	LI:110297.4:2001JAN12	70783480V1	566	1037
40	LI:110297.4:2001JAN12	g1920167	1133	1585
40	LI:110297.4:2001JAN12	3449608H1	1138	1335
40	LI:110297.4:2001JAN12	70785513V1	903	1460
40	LI:110297.4:2001JAN12	70785412V1	1402	1960
40	LI:110297.4:2001JAN12	70026769D1	1394	1799
40	LI:110297.4:2001JAN12	70025601D1	1410	1846

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
40	LI:110297.4:2001JAN12	70781899V1	1401	2051
40	LI:110297.4:2001JAN12	70028622D1	1435	1846
40	LI:110297.4:2001JAN12	6309439H1	1472	1996
40	LI:110297.4:2001JAN12	6515321H1	1482	1795
40	LI:110297.4:2001JAN12	70786740V1	898	1508
40	LI:110297.4:2001JAN12	70787200V1	1868	2415
40	LI:110297.4:2001JAN12	353306R6	1579	2002
40	LI:110297.4:2001JAN12	353306H1	1579	1810
40	LI:110297.4:2001JAN12	70785718V1	1580	1846
40	LI:110297.4:2001JAN12	70028710D1	1587	1846
40	LI:110297.4:2001JAN12	70784006V1	1348	1919
40	LI:110297.4:2001JAN12	70782667V1	1342	1845
40	LI:110297.4:2001JAN12	70786499V1	1357	1846
40	LI:110297.4:2001JAN12	2263980H1	1546	1789
40	LI:110297.4:2001JAN12	70782057V1	1849	2407
40	LI:110297.4:2001JAN12	7726316H1	660	1219
40	LI:110297.4:2001JAN12	1624704H1	460	681
40	LI:110297.4:2001JAN12	g2001257	536	835
40	LI:110297.4:2001JAN12	70786774V1	556	1184
40	LI:110297.4:2001JAN12	70786966V1	556	1186
40	LI:110297.4:2001JAN12	353306T6	1954	2410
40	LI:110297.4:2001JAN12	70027255D1	1979	2215
40	LI:110297.4:2001JAN12	70029345D1	1988	2215
40	LI:110297.4:2001JAN12	1353179F1	1995	2471
40	LI:110297.4:2001JAN12	1353179H1	1995	2245
40	LI:110297.4:2001JAN12	3149528H1	2009	2284
40	LI:110297.4:2001JAN12	3983764T6	2058	2442
40	LI:110297.4:2001JAN12	608911H1	2062	2309
40	LI:110297.4:2001JAN12	2256872H1	2078	2332
40	LI:110297.4:2001JAN12	g1142341	2088	2465
40	LI:110297.4:2001JAN12	g3336427	2090	2472
40	LI:110297.4:2001JAN12	3782340H1	2091	2358
40	LI:110297.4:2001JAN12	g3835146	2102	2474
40	LI:110297.4:2001JAN12	g3742491	2102	2465
40	LI:110297.4:2001JAN12	g3835091	2102	2474
40	LI:110297.4:2001JAN12	g3927350	2110	2465
40	LI:110297.4:2001JAN12	g7039435	2143	2465
40	LI:110297.4:2001JAN12	g1148144	2169	2470
40	LI:110297.4:2001JAN12	3738323H1	2184	2470
40	LI:110297.4:2001JAN12	2856676T6	2185	2422
40	LI:110297.4:2001JAN12	904425H1	2215	2467
40	LI:110297.4:2001JAN12	g1925662	2226	2476
40	LI:110297.4:2001JAN12	3451908T6	2243	2413
40	LI:110297.4:2001JAN12	g5639182	2254	2467
40	LI:110297.4:2001JAN12	2375691T6	2266	2427
40	LI:110297.4:2001JAN12	5874106H1	2267	2470
40	LI:110297.4:2001JAN12	2375691F6	2273	2468
40	LI:110297.4:2001JAN12	2375691H1	2273	2464
40	LI:110297.4:2001JAN12	g1920007	2346	2476

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
40	LI:110297.4:2001JAN12	724533H1	565	797
40	LI:110297.4:2001JAN12	70785147V1	565	1236
40	LI:110297.4:2001JAN12	g4089290	1	392
40	LI:110297.4:2001JAN12	4028996H1	1621	1846
40	LI:110297.4:2001JAN12	70025095D1	1623	2033
40	LI:110297.4:2001JAN12	70786818V1	566	1210
40	LI:110297.4:2001JAN12	70781846V1	585	1233
40	LI:110297.4:2001JAN12	2960369H2	636	943
40	LI:110297.4:2001JAN12	1987506H1	643	856
40	LI:110297.4:2001JAN12	70786215V1	973	1420
40	LI:110297.4:2001JAN12	2840594H1	1730	1951
40	LI:110297.4:2001JAN12	70026254D1	1774	2215
40	LI:110297.4:2001JAN12	70785140V1	1868	2465
40	LI:110297.4:2001JAN12	70027257D1	1868	2215
41	LI:2051312.1:2001JAN12	5496076H1	1	239
41	LI:2051312.1:2001JAN12	71633936V1	321	781
41	LI:2051312.1:2001JAN12	71635207V1	340	781
41	LI:2051312.1:2001JAN12	71634519V1	291	781
41	LI:2051312.1:2001JAN12	71634870V1	369	781
41	LI:2051312.1:2001JAN12	71635242V1	423	780
41	LI:2051312.1:2001JAN12	71607340V1	621	781
41	LI:2051312.1:2001JAN12	71637573V1	124	781
41	LI:2051312.1:2001JAN12	71637992V1	147	781
41	LI:2051312.1:2001JAN12	71639182V1	96	780
41	LI:2051312.1:2001JAN12	71638290V1	362	780
41	LI:2051312.1:2001JAN12	71636821V1	309	779
41	LI:2051312.1:2001JAN12	5496076R6	328	779
41	LI:2051312.1:2001JAN12	71635391V1	381	779
41	LI:2051312.1:2001JAN12	71638124V1	155	692
41	LI:2051312.1:2001JAN12	71637632V1	66	781
41	LI:2051312.1:2001JAN12	71638247V1	86	781
41	LI:2051312.1:2001JAN12	71638024V1	59	781
41	LI:2051312.1:2001JAN12	71635765V1	85	781
41	LI:2051312.1:2001JAN12	71638514V1	97	781
41	LI:2051312.1:2001JAN12	71634090V1	91	781
41	LI:2051312.1:2001JAN12	71634725V1	73	781
41	LI:2051312.1:2001JAN12	71635487V1	113	781
41	LI:2051312.1:2001JAN12	2586589H1	395	663
41	LI:2051312.1:2001JAN12	71638551V1	163	780
41	LI:2051312.1:2001JAN12	71635931V1	213	781
41	LI:2051312.1:2001JAN12	71637959V1	316	780
41	LI:2051312.1:2001JAN12	71638163V1	328	782
41	LI:2051312.1:2001JAN12	71635455V1	344	781
41	LI:2051312.1:2001JAN12	6045011F8	624	1213
41	LI:2051312.1:2001JAN12	6045011H1	619	1201
41	LI:2051312.1:2001JAN12	6560080H1	489	1084
41	LI:2051312.1:2001JAN12	6850955H1	518	1045
41	LI:2051312.1:2001JAN12	6560080F8	489	997
41	LI:2051312.1:2001JAN12	71633951V1	45	778

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
41	LI:2051312.1:2001JAN12	3566902F6	115	792
41	LI:2051312.1:2001JAN12	71638659V1	146	781
41	LI:2051312.1:2001JAN12	71634906V1	35	781
41	LI:2051312.1:2001JAN12	5496076F6	1	441
41	LI:2051312.1:2001JAN12	4074128H1	127	425
41	LI:2051312.1:2001JAN12	3568923H1	98	406
41	LI:2051312.1:2001JAN12	3566902H1	114	352
41	LI:2051312.1:2001JAN12	7203805H1	1071	1637
41	LI:2051312.1:2001JAN12	5092837H1	1501	1636
41	LI:2051312.1:2001JAN12	6560080T8	1089	1364
41	LI:2051312.1:2001JAN12	2707038T7	740	1324
41	LI:2051312.1:2001JAN12	3566902T6	657	1297
41	LI:2051312.1:2001JAN12	6045011J1	726	1290
41	LI:2051312.1:2001JAN12	6045011R8	803	1290
41	LI:2051312.1:2001JAN12	2815381H1	57	116
42	LI:350272.2:2001JAN12	1741002T6	1041	1512
42	LI:350272.2:2001JAN12	3844367H1	626	942
42	LI:350272.2:2001JAN12	960820T6	1037	1515
42	LI:350272.2:2001JAN12	1741002R6	1041	1550
42	LI:350272.2:2001JAN12	4010536H1	1031	1266
42	LI:350272.2:2001JAN12	644238R6	834	1410
42	LI:350272.2:2001JAN12	644238H1	834	892
42	LI:350272.2:2001JAN12	2511182H1	1024	1352
42	LI:350272.2:2001JAN12	7764948H1	133	494
42	LI:350272.2:2001JAN12	g2270187	1175	1553
42	LI:350272.2:2001JAN12	6383176H1	1297	1512
42	LI:350272.2:2001JAN12	g4618967	1154	1550
42	LI:350272.2:2001JAN12	g2575091	620	875
42	LI:350272.2:2001JAN12	2206242H1	619	871
42	LI:350272.2:2001JAN12	4241989H1	408	742
42	LI:350272.2:2001JAN12	g2674996	415	827
42	LI:350272.2:2001JAN12	g1186534	421	828
42	LI:350272.2:2001JAN12	7326176H1	442	909
42	LI:350272.2:2001JAN12	6311958H1	458	892
42	LI:350272.2:2001JAN12	6201854H1	470	912
42	LI:350272.2:2001JAN12	3559406H1	469	574
42	LI:350272.2:2001JAN12	5306551H1	1287	1419
42	LI:350272.2:2001JAN12	5306583H1	1288	1449
42	LI:350272.2:2001JAN12	7082642H1	1	232
42	LI:350272.2:2001JAN12	6758676J1	1	582
42	LI:350272.2:2001JAN12	8176753H1	117	790
42	LI:350272.2:2001JAN12	g2669493	1153	1552
42	LI:350272.2:2001JAN12	2116744H1	810	892
42	LI:350272.2:2001JAN12	1864387H1	804	892
42	LI:350272.2:2001JAN12	g5755616	1126	1556
42	LI:350272.2:2001JAN12	g2465965	1143	1556
42	LI:350272.2:2001JAN12	3740987H1	323	625
42	LI:350272.2:2001JAN12	5020588T1	338	779
42	LI:350272.2:2001JAN12	603382H1	320	576

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
42	LI:350272.2:2001JAN12	2538770H1	320	536
42	LI:350272.2:2001JAN12	5020696T1	319	780
42	LI:350272.2:2001JAN12	g4074869	1113	1556
42	LI:350272.2:2001JAN12	6606673H1	1076	1551
42	LI:350272.2:2001JAN12	g4970896	1077	1555
42	LI:350272.2:2001JAN12	g4125734	1079	1539
42	LI:350272.2:2001JAN12	g3741618	1094	1559
42	LI:350272.2:2001JAN12	g6038705	1110	1550
42	LI:350272.2:2001JAN12	2697244H1	565	854
42	LI:350272.2:2001JAN12	4665428H1	570	845
42	LI:350272.2:2001JAN12	708387H1	587	865
42	LI:350272.2:2001JAN12	g3213833	597	826
42	LI:350272.2:2001JAN12	2715220H1	603	850
42	LI:350272.2:2001JAN12	6486886H1	617	1161
42	LI:350272.2:2001JAN12	g2577306	1301	1550
42	LI:350272.2:2001JAN12	644238T6	1287	1516
42	LI:350272.2:2001JAN12	6326064H1	1288	1553
42	LI:350272.2:2001JAN12	6552652H1	762	1293
42	LI:350272.2:2001JAN12	4138187H1	785	892
42	LI:350272.2:2001JAN12	6552052H1	762	1227
42	LI:350272.2:2001JAN12	g5812197	1335	1536
42	LI:350272.2:2001JAN12	1684883H1	1344	1550
42	LI:350272.2:2001JAN12	3932451H1	1363	1550
42	LI:350272.2:2001JAN12	211293H1	1365	1557
42	LI:350272.2:2001JAN12	211696H1	1365	1550
42	LI:350272.2:2001JAN12	633648H1	1372	1563
42	LI:350272.2:2001JAN12	3565543H1	1384	1508
42	LI:350272.2:2001JAN12	g2359505	1463	1550
42	LI:350272.2:2001JAN12	g4649884	1466	1544
42	LI:350272.2:2001JAN12	6615126H1	1488	1550
42	LI:350272.2:2001JAN12	7322258H1	232	865
42	LI:350272.2:2001JAN12	2127622H1	260	527
42	LI:350272.2:2001JAN12	1684883T6	1061	1515
42	LI:350272.2:2001JAN12	1684883F6	1061	1550
42	LI:350272.2:2001JAN12	3621890H1	1050	1132
42	LI:350272.2:2001JAN12	211114H1	1051	1101
42	LI:350272.2:2001JAN12	581813T6	1052	1512
42	LI:350272.2:2001JAN12	g2820887	1053	1553
42	LI:350272.2:2001JAN12	5766360H1	665	1183
42	LI:350272.2:2001JAN12	3016843H1	692	892
42	LI:350272.2:2001JAN12	g5755074	1271	1556
42	LI:350272.2:2001JAN12	6843381H1	1271	1382
42	LI:350272.2:2001JAN12	g2669985	1217	1446
42	LI:350272.2:2001JAN12	2561156H1	1226	1522
42	LI:350272.2:2001JAN12	g5364704	1229	1551
42	LI:350272.2:2001JAN12	1637245H1	1207	1419
42	LI:350272.2:2001JAN12	g4267877	1205	1544
42	LI:350272.2:2001JAN12	g4267523	1203	1544
42	LI:350272.2:2001JAN12	g4267458	1203	1544

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
42	LI:350272.2:2001JAN12	g2900340	636	815
42	LI:350272.2:2001JAN12	2805489H1	659	914
42	LI:350272.2:2001JAN12	581813R6	193	553
42	LI:350272.2:2001JAN12	g3307326	1184	1559
42	LI:350272.2:2001JAN12	g2715505	1185	1556
42	LI:350272.2:2001JAN12	4353485H1	1050	1139
42	LI:350272.2:2001JAN12	g4079566	1300	1550
42	LI:350272.2:2001JAN12	1888879H1	510	800
42	LI:350272.2:2001JAN12	6058322H1	555	894
42	LI:350272.2:2001JAN12	4121623H1	558	857
42	LI:350272.2:2001JAN12	960820R6	562	938
42	LI:350272.2:2001JAN12	960820H1	562	841
42	LI:350272.2:2001JAN12	3490063H1	471	771
42	LI:350272.2:2001JAN12	g7153657	480	827
42	LI:350272.2:2001JAN12	8167852H1	492	1120
42	LI:350272.2:2001JAN12	5865088H1	182	475
42	LI:350272.2:2001JAN12	581813H1	193	465
42	LI:350272.2:2001JAN12	g5397025	1182	1550
42	LI:350272.2:2001JAN12	g855861	1192	1547
42	LI:350272.2:2001JAN12	4010319H1	1041	1260
42	LI:350272.2:2001JAN12	1741002H1	1041	1125
42	LI:350272.2:2001JAN12	2650967H1	1042	1224
42	LI:350272.2:2001JAN12	4013519H1	1050	1264
42	LI:350272.2:2001JAN12	4353493H1	1050	1141
43	LI:1085472.4:2001JAN12	7987779H1	2601	3017
43	LI:1085472.4:2001JAN12	3781866F7	2601	3002
43	LI:1085472.4:2001JAN12	71367354V1	2601	3099
43	LI:1085472.4:2001JAN12	71366182V1	2601	3145
43	LI:1085472.4:2001JAN12	3869194F6	2601	2942
43	LI:1085472.4:2001JAN12	3781866F6	2601	2804
43	LI:1085472.4:2001JAN12	71370688V1	2601	2727
43	LI:1085472.4:2001JAN12	3869194H1	2601	2725
43	LI:1085472.4:2001JAN12	1802440H1	2601	2701
43	LI:1085472.4:2001JAN12	658162H1	2601	2686
43	LI:1085472.4:2001JAN12	70016474D1	2601	2657
43	LI:1085472.4:2001JAN12	70015482D1	2601	2657
43	LI:1085472.4:2001JAN12	4108457H1	2954	3221
43	LI:1085472.4:2001JAN12	7340664H1	2972	3597
43	LI:1085472.4:2001JAN12	4933091H1	2992	3230
43	LI:1085472.4:2001JAN12	70016523D1	3003	3496
43	LI:1085472.4:2001JAN12	4341990H1	3016	3265
43	LI:1085472.4:2001JAN12	5407487H1	3043	3296
43	LI:1085472.4:2001JAN12	2617950H1	3055	3318
43	LI:1085472.4:2001JAN12	6603445H1	3067	3206
43	LI:1085472.4:2001JAN12	4650576H1	3068	3354
43	LI:1085472.4:2001JAN12	6395196H1	3071	3225
43	LI:1085472.4:2001JAN12	70017457D1	3096	3489
43	LI:1085472.4:2001JAN12	70014308D1	2468	2882
43	LI:1085472.4:2001JAN12	g1472629	2597	2923

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
43	LI:1085472.4:2001JAN12	71372045V1	2601	2727
43	LI:1085472.4:2001JAN12	3386621H1	2845	3004
43	LI:1085472.4:2001JAN12	7630053J1	2857	3498
43	LI:1085472.4:2001JAN12	4933617H1	2863	3095
43	LI:1085472.4:2001JAN12	1823282H1	2878	3114
43	LI:1085472.4:2001JAN12	6407353H1	2884	3206
43	LI:1085472.4:2001JAN12	6407395H1	2885	3278
43	LI:1085472.4:2001JAN12	5511808H1	2907	3155
43	LI:1085472.4:2001JAN12	7766094H1	2933	3510
43	LI:1085472.4:2001JAN12	3781871H1	2601	2794
43	LI:1085472.4:2001JAN12	3781867H1	2601	2783
43	LI:1085472.4:2001JAN12	1802440F6	2601	2792
43	LI:1085472.4:2001JAN12	4327538H1	2601	2686
43	LI:1085472.4:2001JAN12	2763622H1	2624	2874
43	LI:1085472.4:2001JAN12	4202242H1	2627	2780
43	LI:1085472.4:2001JAN12	7426017H1	2630	3252
43	LI:1085472.4:2001JAN12	6599647H1	2651	3221
43	LI:1085472.4:2001JAN12	7766094J1	2657	3061
43	LI:1085472.4:2001JAN12	70014159D1	2670	3093
43	LI:1085472.4:2001JAN12	70015318D1	2670	3177
43	LI:1085472.4:2001JAN12	6937773R8	2679	3358
43	LI:1085472.4:2001JAN12	4820435H1	2701	2985
43	LI:1085472.4:2001JAN12	4932948H1	2772	3047
43	LI:1085472.4:2001JAN12	4970490H1	2773	3070
43	LI:1085472.4:2001JAN12	2509043F6	2824	3248
43	LI:1085472.4:2001JAN12	2509043H1	2824	3085
43	LI:1085472.4:2001JAN12	2778212F6	2827	3334
43	LI:1085472.4:2001JAN12	2778212H1	2827	3081
43	LI:1085472.4:2001JAN12	2872122H1	2830	3134
43	LI:1085472.4:2001JAN12	6298454H1	2601	2818
43	LI:1085472.4:2001JAN12	4934841F6	1207	1762
43	LI:1085472.4:2001JAN12	7383285H1	1261	1609
43	LI:1085472.4:2001JAN12	3082109H1	1310	1630
43	LI:1085472.4:2001JAN12	649924H1	1328	1608
43	LI:1085472.4:2001JAN12	7765508H1	1396	2037
43	LI:1085472.4:2001JAN12	7762086H1	1489	1998
43	LI:1085472.4:2001JAN12	5032294H1	1590	1762
43	LI:1085472.4:2001JAN12	7667194H1	1600	2184
43	LI:1085472.4:2001JAN12	g6986315	1740	2181
43	LI:1085472.4:2001JAN12	g4735856	1784	2188
43	LI:1085472.4:2001JAN12	7987343H1	1791	2321
43	LI:1085472.4:2001JAN12	7762086J1	1823	2309
43	LI:1085472.4:2001JAN12	7618406J1	1833	2304
43	LI:1085472.4:2001JAN12	3040429H1	1851	2132
43	LI:1085472.4:2001JAN12	7979208H1	1950	2304
43	LI:1085472.4:2001JAN12	6765078H1	1976	2304
43	LI:1085472.4:2001JAN12	7179252H1	1999	2304
43	LI:1085472.4:2001JAN12	8099682H1	2137	2750
43	LI:1085472.4:2001JAN12	6937773H1	2145	2304

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
43	LI:1085472.4:2001JAN12	6937773F8	2146	2744
43	LI:1085472.4:2001JAN12	1729838H1	2228	2304
43	LI:1085472.4:2001JAN12	8053354J1	452	1017
43	LI:1085472.4:2001JAN12	7384254H1	466	1017
43	LI:1085472.4:2001JAN12	8267087H1	500	875
43	LI:1085472.4:2001JAN12	6355031F8	805	1230
43	LI:1085472.4:2001JAN12	6993231H1	864	1255
43	LI:1085472.4:2001JAN12	7765508J1	918	1556
43	LI:1085472.4:2001JAN12	2765041H1	1004	1175
43	LI:1085472.4:2001JAN12	6355463H1	1009	1238
43	LI:1085472.4:2001JAN12	6355432H1	1028	1238
43	LI:1085472.4:2001JAN12	8013915H1	1064	1584
43	LI:1085472.4:2001JAN12	6488391F9	1068	1687
43	LI:1085472.4:2001JAN12	6488391H1	1068	1474
43	LI:1085472.4:2001JAN12	4031565H1	1144	1286
43	LI:1085472.4:2001JAN12	4031565F8	1148	1661
43	LI:1085472.4:2001JAN12	4934841H1	1207	1491
43	LI:1085472.4:2001JAN12	7766520J1	1	558
43	LI:1085472.4:2001JAN12	7385651H1	68	706
43	LI:1085472.4:2001JAN12	g6656244	180	616
43	LI:1085472.4:2001JAN12	7766520H1	205	885
43	LI:1085472.4:2001JAN12	7406994H1	326	647
43	LI:1085472.4:2001JAN12	7728326H1	434	867
43	LI:1085472.4:2001JAN12	g2107297	1	390
44	LI:1190272.1:2001JAN12	5722642H1	70	626
44	LI:1190272.1:2001JAN12	g3077349	738	1084
44	LI:1190272.1:2001JAN12	g1792770	751	1082
44	LI:1190272.1:2001JAN12	g3873141	765	1089
44	LI:1190272.1:2001JAN12	g2809757	772	1087
44	LI:1190272.1:2001JAN12	g3890950	647	1081
44	LI:1190272.1:2001JAN12	g3777995	720	1083
44	LI:1190272.1:2001JAN12	g2569412	725	1087
44	LI:1190272.1:2001JAN12	4527335H1	33	296
44	LI:1190272.1:2001JAN12	6335579H1	53	639
44	LI:1190272.1:2001JAN12	5907518H1	53	336
44	LI:1190272.1:2001JAN12	6294680H1	52	296
44	LI:1190272.1:2001JAN12	7719486J1	1	379
44	LI:1190272.1:2001JAN12	g6650542	1	1087
44	LI:1190272.1:2001JAN12	70433048D1	131	649
44	LI:1190272.1:2001JAN12	002242H1	645	1055
44	LI:1190272.1:2001JAN12	7742643H1	484	957
44	LI:1190272.1:2001JAN12	g1162646	638	1080
44	LI:1190272.1:2001JAN12	g3598316	579	1079
44	LI:1190272.1:2001JAN12	g3432529	599	1078
44	LI:1190272.1:2001JAN12	g3595191	604	1089
44	LI:1190272.1:2001JAN12	g3756257	611	1077
44	LI:1190272.1:2001JAN12	g3231777	614	1089
44	LI:1190272.1:2001JAN12	g2197997	854	1080
44	LI:1190272.1:2001JAN12	6589156H1	523	1089

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
44	LI:1190272.1:2001JAN12	g2052982	920	1090
44	LI:1190272.1:2001JAN12	g3801217	775	1083
44	LI:1190272.1:2001JAN12	70513918V1	75	602
44	LI:1190272.1:2001JAN12	5970131H1	70	614
44	LI:1190272.1:2001JAN12	70433316D1	217	600
44	LI:1190272.1:2001JAN12	6967857H1	330	1030
44	LI:1190272.1:2001JAN12	6282502H1	330	621
44	LI:1190272.1:2001JAN12	6282582H1	330	593
44	LI:1190272.1:2001JAN12	6184045H1	330	633
44	LI:1190272.1:2001JAN12	6281314H1	330	598
44	LI:1190272.1:2001JAN12	6285426H1	330	591
44	LI:1190272.1:2001JAN12	6280830H1	330	589
44	LI:1190272.1:2001JAN12	6280736H1	330	583
44	LI:1190272.1:2001JAN12	6288244H1	330	581
44	LI:1190272.1:2001JAN12	70433366D2	131	649
44	LI:1190272.1:2001JAN12	5603809H1	186	444
44	LI:1190272.1:2001JAN12	70433375D2	217	600
44	LI:1190272.1:2001JAN12	g2167301	615	1084
44	LI:1190272.1:2001JAN12	g1765314	618	1087
44	LI:1190272.1:2001JAN12	5468034H1	70	280
44	LI:1190272.1:2001JAN12	g1162429	704	1080
44	LI:1190272.1:2001JAN12	g4113765	732	1073
44	LI:1190272.1:2001JAN12	5350781H1	82	337
44	LI:1190272.1:2001JAN12	6717604F8	84	626
44	LI:1190272.1:2001JAN12	6335665H1	84	626
44	LI:1190272.1:2001JAN12	6335465H1	85	645
44	LI:1190272.1:2001JAN12	4923429F8	85	532
44	LI:1190272.1:2001JAN12	7055780H1	57	658
44	LI:1190272.1:2001JAN12	5973544H1	90	617
44	LI:1190272.1:2001JAN12	g1331187	111	573
44	LI:1190272.1:2001JAN12	70433280D1	123	597
44	LI:1190272.1:2001JAN12	70433269D1	130	531
44	LI:1190272.1:2001JAN12	7612525J1	1	416
44	LI:1190272.1:2001JAN12	60220168V1	60	484
44	LI:1190272.1:2001JAN12	6717604H1	73	445
44	LI:1190272.1:2001JAN12	70513540V1	75	636
44	LI:1190272.1:2001JAN12	70514963V1	75	633
44	LI:1190272.1:2001JAN12	6963747H1	434	887
44	LI:1190272.1:2001JAN12	6717604T8	477	912
44	LI:1190272.1:2001JAN12	6959682H1	330	651
44	LI:1190272.1:2001JAN12	6282416H1	330	416
44	LI:1190272.1:2001JAN12	5724550T8	415	733
44	LI:1190272.1:2001JAN12	001418H1	550	999
44	LI:1190272.1:2001JAN12	g5848464	579	1087
44	LI:1190272.1:2001JAN12	068009H1	64	141
45	LI:1086797.1:2001JAN12	7204577R8	203	633
45	LI:1086797.1:2001JAN12	1445162H1	3136	3409
45	LI:1086797.1:2001JAN12	4754255H1	3180	3424
45	LI:1086797.1:2001JAN12	7006595H1	3240	3579

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
45	LI:1086797.1:2001JAN12	g774705	3245	3425
45	LI:1086797.1:2001JAN12	g775096	3246	3603
45	LI:1086797.1:2001JAN12	g1126669	3114	3606
45	LI:1086797.1:2001JAN12	1445162F6	3136	3582
45	LI:1086797.1:2001JAN12	7756437H1	3098	3257
45	LI:1086797.1:2001JAN12	6824374J1	3098	3180
45	LI:1086797.1:2001JAN12	6933031H1	3098	3516
45	LI:1086797.1:2001JAN12	7089559R8	3098	3508
45	LI:1086797.1:2001JAN12	8067941J1	3098	3359
45	LI:1086797.1:2001JAN12	g4089499	2724	3000
45	LI:1086797.1:2001JAN12	4203792H1	2837	3054
45	LI:1086797.1:2001JAN12	1306720H1	2873	3054
45	LI:1086797.1:2001JAN12	8068254J1	2987	3582
45	LI:1086797.1:2001JAN12	8105108J1	3000	3054
45	LI:1086797.1:2001JAN12	6831305J1	3098	3521
45	LI:1086797.1:2001JAN12	7227685H1	3098	3521
45	LI:1086797.1:2001JAN12	7189816H2	821	1356
45	LI:1086797.1:2001JAN12	8013947H1	914	1427
45	LI:1086797.1:2001JAN12	6922293H1	912	1329
45	LI:1086797.1:2001JAN12	7197662R8	1002	1672
45	LI:1086797.1:2001JAN12	g7959218	145	4941
45	LI:1086797.1:2001JAN12	7313871H1	2317	2829
45	LI:1086797.1:2001JAN12	g660782	2369	2727
45	LI:1086797.1:2001JAN12	4153824T6	2477	3009
45	LI:1086797.1:2001JAN12	6474568H1	2504	3041
45	LI:1086797.1:2001JAN12	8105108H1	2508	3054
45	LI:1086797.1:2001JAN12	6831305H1	2511	3051
45	LI:1086797.1:2001JAN12	3282052H1	2537	2800
45	LI:1086797.1:2001JAN12	g660721	2589	2977
45	LI:1086797.1:2001JAN12	6936769H1	2688	3198
45	LI:1086797.1:2001JAN12	2889461F6	2701	3197
45	LI:1086797.1:2001JAN12	2889461H1	2701	2876
45	LI:1086797.1:2001JAN12	6824374H1	1928	2478
45	LI:1086797.1:2001JAN12	7199082F8	776	1278
45	LI:1086797.1:2001JAN12	7199082H1	774	1137
45	LI:1086797.1:2001JAN12	7313879H1	2216	2829
45	LI:1086797.1:2001JAN12	7756437J1	2220	2817
45	LI:1086797.1:2001JAN12	3605176T9	2299	2807
45	LI:1086797.1:2001JAN12	7204577H1	1151	1677
45	LI:1086797.1:2001JAN12	7165980R8	678	912
45	LI:1086797.1:2001JAN12	6935088R8	483	873
45	LI:1086797.1:2001JAN12	7197662H2	547	1096
45	LI:1086797.1:2001JAN12	7197662F8	547	1242
45	LI:1086797.1:2001JAN12	7165980R6	650	1224
45	LI:1086797.1:2001JAN12	6935088R6	290	872
45	LI:1086797.1:2001JAN12	3605176F8	1453	1933
45	LI:1086797.1:2001JAN12	7165980F8	1561	2093
45	LI:1086797.1:2001JAN12	7165980H1	1657	2093
45	LI:1086797.1:2001JAN12	4153824F6	1673	2208

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
45	LI:1086797.1:2001JAN12	4153824H1	1673	1906
45	LI:1086797.1:2001JAN12	3766035H1	1791	2058
45	LI:1086797.1:2001JAN12	7436283H1	1934	2320
45	LI:1086797.1:2001JAN12	8038923J1	1219	1606
45	LI:1086797.1:2001JAN12	7453632H1	1252	1845
45	LI:1086797.1:2001JAN12	3605176H1	1453	1641
45	LI:1086797.1:2001JAN12	4180723H1	1129	1246
45	LI:1086797.1:2001JAN12	6476576H1	1141	1674
45	LI:1086797.1:2001JAN12	4180723F6	1129	1349
45	LI:1086797.1:2001JAN12	7360841H1	1078	1498
45	LI:1086797.1:2001JAN12	7163357H1	1031	1557
45	LI:1086797.1:2001JAN12	7204577F8	1039	1677
45	LI:1086797.1:2001JAN12	7163357F8	1031	1703
45	LI:1086797.1:2001JAN12	6935088F8	1	301
45	LI:1086797.1:2001JAN12	6935088F7	1	405
45	LI:1086797.1:2001JAN12	6935088H1	1	582
45	LI:1086797.1:2001JAN12	g766318	3246	3608
46	LI:1144466.1:2001JAN12	5872651H1	1487	1610
46	LI:1144466.1:2001JAN12	570945T6	2062	2114
46	LI:1144466.1:2001JAN12	6417564H1	2046	2148
46	LI:1144466.1:2001JAN12	70956541V1	549	995
46	LI:1144466.1:2001JAN12	570945H1	549	837
46	LI:1144466.1:2001JAN12	70938706V1	534	1247
46	LI:1144466.1:2001JAN12	70936971V1	535	1194
46	LI:1144466.1:2001JAN12	70947577V1	539	1181
46	LI:1144466.1:2001JAN12	5487221H1	593	856
46	LI:1144466.1:2001JAN12	70947867V1	599	1121
46	LI:1144466.1:2001JAN12	4411993H1	1438	1590
46	LI:1144466.1:2001JAN12	71285162V1	1145	1623
46	LI:1144466.1:2001JAN12	70954107V1	1153	1610
46	LI:1144466.1:2001JAN12	1369364R1	1158	1635
46	LI:1144466.1:2001JAN12	70950159V1	550	1200
46	LI:1144466.1:2001JAN12	70947667V1	549	1113
46	LI:1144466.1:2001JAN12	70954424V1	549	1079
46	LI:1144466.1:2001JAN12	70948040V1	549	1069
46	LI:1144466.1:2001JAN12	570945R6	549	851
46	LI:1144466.1:2001JAN12	70953419V1	549	1225
46	LI:1144466.1:2001JAN12	g1012139	553	907
46	LI:1144466.1:2001JAN12	70948638V1	557	1285
46	LI:1144466.1:2001JAN12	70938482V1	582	1186
46	LI:1144466.1:2001JAN12	g3647741	1636	2040
46	LI:1144466.1:2001JAN12	647356H1	1051	1321
46	LI:1144466.1:2001JAN12	6201236H1	652	1294
46	LI:1144466.1:2001JAN12	70953487V1	706	1363
46	LI:1144466.1:2001JAN12	70947711V1	754	1435
46	LI:1144466.1:2001JAN12	70947562V1	783	1456
46	LI:1144466.1:2001JAN12	70947510V1	790	1454
46	LI:1144466.1:2001JAN12	526973H1	860	1088
46	LI:1144466.1:2001JAN12	70936936V1	880	1506

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
46	LI:1144466.1:2001JAN12	70936152V1	907	1523
46	LI:1144466.1:2001JAN12	70954726V1	923	1395
46	LI:1144466.1:2001JAN12	71285983V1	930	1504
46	LI:1144466.1:2001JAN12	70950123V1	550	1164
46	LI:1144466.1:2001JAN12	g3752555	1919	2165
46	LI:1144466.1:2001JAN12	g3740213	1919	2165
46	LI:1144466.1:2001JAN12	3028285H1	1911	2170
46	LI:1144466.1:2001JAN12	g7319375	1919	2151
46	LI:1144466.1:2001JAN12	70935832V1	329	803
46	LI:1144466.1:2001JAN12	3629314F6	329	772
46	LI:1144466.1:2001JAN12	70936512V1	329	764
46	LI:1144466.1:2001JAN12	70949896V1	1398	1610
46	LI:1144466.1:2001JAN12	70950737V1	1405	1610
46	LI:1144466.1:2001JAN12	71286465V1	1423	1625
46	LI:1144466.1:2001JAN12	3028285F6	1911	2170
46	LI:1144466.1:2001JAN12	70938336V1	329	893
46	LI:1144466.1:2001JAN12	70936170V1	329	832
46	LI:1144466.1:2001JAN12	70938889V1	329	837
46	LI:1144466.1:2001JAN12	g1012093	1073	1392
46	LI:1144466.1:2001JAN12	3629314T6	1097	1484
46	LI:1144466.1:2001JAN12	70935940V1	1153	1521
46	LI:1144466.1:2001JAN12	2827437H2	2090	2148
46	LI:1144466.1:2001JAN12	6891021H1	1362	1625
46	LI:1144466.1:2001JAN12	70950703V1	1382	2023
46	LI:1144466.1:2001JAN12	6417428H1	2046	2148
46	LI:1144466.1:2001JAN12	70947377V1	550	1187
46	LI:1144466.1:2001JAN12	1369364H1	1158	1426
46	LI:1144466.1:2001JAN12	70947433V1	1209	1608
46	LI:1144466.1:2001JAN12	g787427	2025	2154
46	LI:1144466.1:2001JAN12	70949609V1	1327	1610
46	LI:1144466.1:2001JAN12	6763404J1	1020	1474
46	LI:1144466.1:2001JAN12	3881641T8	1926	2046
46	LI:1144466.1:2001JAN12	g5756510	1926	2135
46	LI:1144466.1:2001JAN12	3166278H1	1926	1976
46	LI:1144466.1:2001JAN12	g793623	2016	2157
46	LI:1144466.1:2001JAN12	70948226V1	1395	1624
46	LI:1144466.1:2001JAN12	70955217V1	1919	2120
46	LI:1144466.1:2001JAN12	g4597925	1926	2138
46	LI:1144466.1:2001JAN12	70937337V1	329	676
46	LI:1144466.1:2001JAN12	3629314H1	330	554
46	LI:1144466.1:2001JAN12	5725468H1	1919	2141
46	LI:1144466.1:2001JAN12	6128137F8	1	63
46	LI:1144466.1:2001JAN12	7609962H1	1	587
46	LI:1144466.1:2001JAN12	7606322J1	15	538
46	LI:1144466.1:2001JAN12	7408213H1	22	596
46	LI:1144466.1:2001JAN12	7287103H1	278	703
46	LI:1144466.1:2001JAN12	70938941V1	329	959
46	LI:1144466.1:2001JAN12	70936832V1	329	778
46	LI:1144466.1:2001JAN12	70936776V1	329	891

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
46	LI:1144466.1:2001JAN12	70937195V1	329	921
46	LI:1144466.1:2001JAN12	70936226V1	329	917
46	LI:1144466.1:2001JAN12	70948348V1	1244	1610
46	LI:1144466.1:2001JAN12	70950190V1	1253	1610
46	LI:1144466.1:2001JAN12	70948028V1	1264	1610
46	LI:1144466.1:2001JAN12	6110340H1	373	651
46	LI:1144466.1:2001JAN12	70938761V1	485	1218
46	LI:1144466.1:2001JAN12	70949010V1	616	1175
46	LI:1144466.1:2001JAN12	70938744V1	604	1150
46	LI:1144466.1:2001JAN12	70948930V1	625	1189
46	LI:1144466.1:2001JAN12	4411993F6	1436	1988
46	LI:1144466.1:2001JAN12	7937564H1	1919	2148
46	LI:1144466.1:2001JAN12	70937317V1	484	1003
46	LI:1144466.1:2001JAN12	70935643V1	488	1013
46	LI:1144466.1:2001JAN12	3028285T6	1904	2129
46	LI:1144466.1:2001JAN12	g6198550	1906	2141
46	LI:1144466.1:2001JAN12	70948340V1	1222	1624
46	LI:1144466.1:2001JAN12	g787168	934	1239
46	LI:1144466.1:2001JAN12	g795021	934	1243
46	LI:1144466.1:2001JAN12	6554107H1	973	1506
46	LI:1144466.1:2001JAN12	70935145V1	964	1524
46	LI:1144466.1:2001JAN12	70937449V1	965	1523
46	LI:1144466.1:2001JAN12	70948648V1	971	1656
46	LI:1144466.1:2001JAN12	70949088V1	1022	1465
46	LI:1144466.1:2001JAN12	70941525V1	1388	1523
46	LI:1144466.1:2001JAN12	71897328V1	166	317
47	LI:1147914.1:2001JAN12	5099781H1	509	735
47	LI:1147914.1:2001JAN12	g993188	546	877
47	LI:1147914.1:2001JAN12	2502317H1	684	917
47	LI:1147914.1:2001JAN12	5271374T9	714	1260
47	LI:1147914.1:2001JAN12	2183876H1	1192	1394
47	LI:1147914.1:2001JAN12	3254347H1	1	91
47	LI:1147914.1:2001JAN12	3254347R6	1	586
47	LI:1147914.1:2001JAN12	5668261H1	224	452
48	LI:758086.1:2001JAN12	70806216V1	763	1301
48	LI:758086.1:2001JAN12	70808642V1	763	1210
48	LI:758086.1:2001JAN12	70805710V1	830	1298
48	LI:758086.1:2001JAN12	2100630H1	865	1055
48	LI:758086.1:2001JAN12	292419T6	874	1001
48	LI:758086.1:2001JAN12	1801910T6	1256	1392
48	LI:758086.1:2001JAN12	70810483V1	1260	1392
48	LI:758086.1:2001JAN12	1801910F6	1263	1392
48	LI:758086.1:2001JAN12	70807456V1	1261	1392
48	LI:758086.1:2001JAN12	1801910H1	1263	1376
48	LI:758086.1:2001JAN12	2135293T6	1293	1392
48	LI:758086.1:2001JAN12	70810557V1	763	1293
48	LI:758086.1:2001JAN12	70809681V1	763	1271
48	LI:758086.1:2001JAN12	70809244V1	978	1392
48	LI:758086.1:2001JAN12	70809996V1	1005	1392

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
48	LI:758086.1:2001JAN12	70807991V1	1043	1392
48	LI:758086.1:2001JAN12	70809655V1	1090	1392
48	LI:758086.1:2001JAN12	70806128V1	1097	1392
48	LI:758086.1:2001JAN12	109127H1	1154	1322
48	LI:758086.1:2001JAN12	3960046T8	887	1009
48	LI:758086.1:2001JAN12	292419H1	194	469
48	LI:758086.1:2001JAN12	292419R6	196	486
48	LI:758086.1:2001JAN12	2135293H1	763	1036
48	LI:758086.1:2001JAN12	3960046F8	333	926
48	LI:758086.1:2001JAN12	3960046H2	333	473
48	LI:758086.1:2001JAN12	g4114677	609	1055
48	LI:758086.1:2001JAN12	2705604T6	744	1011
48	LI:758086.1:2001JAN12	1871586H1	744	869
48	LI:758086.1:2001JAN12	1998855H1	744	926
48	LI:758086.1:2001JAN12	g3429159	744	1052
48	LI:758086.1:2001JAN12	g3674688	744	1053
48	LI:758086.1:2001JAN12	70806797V1	763	1181
48	LI:758086.1:2001JAN12	70810992V1	763	1208
48	LI:758086.1:2001JAN12	2135293F6	763	1223
48	LI:758086.1:2001JAN12	6864812H1	1	502
49	LI:765245.5:2001JAN12	5158962H1	439	729
49	LI:765245.5:2001JAN12	7987122H1	470	914
49	LI:765245.5:2001JAN12	8179752H1	509	1058
49	LI:765245.5:2001JAN12	7695539H1	516	588
49	LI:765245.5:2001JAN12	7695539J1	522	588
49	LI:765245.5:2001JAN12	7705549H1	534	1195
49	LI:765245.5:2001JAN12	5340204H1	1651	1805
49	LI:765245.5:2001JAN12	1815594H1	2092	2248
49	LI:765245.5:2001JAN12	4373124H1	2092	2209
49	LI:765245.5:2001JAN12	1217584H1	2092	2194
49	LI:765245.5:2001JAN12	4378621H1	1644	1826
49	LI:765245.5:2001JAN12	4434560H1	1646	1805
49	LI:765245.5:2001JAN12	g2539282	2092	2293
49	LI:765245.5:2001JAN12	6344377H1	2092	2229
49	LI:765245.5:2001JAN12	834630H1	1763	1826
49	LI:765245.5:2001JAN12	5172864T8	1771	2222
49	LI:765245.5:2001JAN12	5274313F9	1788	2293
49	LI:765245.5:2001JAN12	g6837363	1824	2299
49	LI:765245.5:2001JAN12	7452794H1	2092	2293
49	LI:765245.5:2001JAN12	55105765H1	2092	2254
49	LI:765245.5:2001JAN12	55105765J1	2092	2254
49	LI:765245.5:2001JAN12	1221711H1	2090	2247
49	LI:765245.5:2001JAN12	633496H1	2090	2189
49	LI:765245.5:2001JAN12	g2466878	2092	2298
49	LI:765245.5:2001JAN12	7990106H2	2092	2276
49	LI:765245.5:2001JAN12	g2881979	2092	2292
49	LI:765245.5:2001JAN12	6195105H1	2092	2276
49	LI:765245.5:2001JAN12	1921654H1	2092	2267
49	LI:765245.5:2001JAN12	574306H1	2092	2250

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
49	LI:765245.5:2001JAN12	2624265H1	2092	2159
49	LI:765245.5:2001JAN12	2510561H1	2092	2215
49	LI:765245.5:2001JAN12	6292645H1	1122	1359
49	LI:765245.5:2001JAN12	1668002H1	1747	1826
49	LI:765245.5:2001JAN12	1670091H1	1747	1805
49	LI:765245.5:2001JAN12	4144443H1	1748	1826
49	LI:765245.5:2001JAN12	5585830H1	1747	1819
49	LI:765245.5:2001JAN12	2266319H1	1749	1826
49	LI:765245.5:2001JAN12	4143570H1	1748	1826
49	LI:765245.5:2001JAN12	961991H1	1711	1826
49	LI:765245.5:2001JAN12	3292837H1	1720	1820
49	LI:765245.5:2001JAN12	341699H1	1722	1826
49	LI:765245.5:2001JAN12	1596869H1	1724	1821
49	LI:765245.5:2001JAN12	147603H1	1724	1805
49	LI:765245.5:2001JAN12	582805H1	1736	1805
49	LI:765245.5:2001JAN12	7969039H1	1742	2292
49	LI:765245.5:2001JAN12	5597415H1	1746	1805
49	LI:765245.5:2001JAN12	4120492H1	1747	1826
49	LI:765245.5:2001JAN12	2081409H1	1747	1826
49	LI:765245.5:2001JAN12	7270879H1	1142	1782
49	LI:765245.5:2001JAN12	7966934H1	1142	1522
49	LI:765245.5:2001JAN12	6374269H1	2092	2222
49	LI:765245.5:2001JAN12	2058225H1	2092	2221
49	LI:765245.5:2001JAN12	5446511H1	1547	1835
49	LI:765245.5:2001JAN12	6109284H1	1547	1805
49	LI:765245.5:2001JAN12	4763556T9	1584	2187
49	LI:765245.5:2001JAN12	7966125H1	1123	1512
49	LI:765245.5:2001JAN12	55037612H1	1124	1746
49	LI:765245.5:2001JAN12	7702707H2	340	1041
49	LI:765245.5:2001JAN12	7645206J1	351	1020
49	LI:765245.5:2001JAN12	7712422J1	416	1115
49	LI:765245.5:2001JAN12	7754632H1	444	745
49	LI:765245.5:2001JAN12	7754632J1	444	745
49	LI:765245.5:2001JAN12	2186758H1	1666	1820
49	LI:765245.5:2001JAN12	898077H1	1667	1805
49	LI:765245.5:2001JAN12	70456554V1	1668	1805
49	LI:765245.5:2001JAN12	6476182H1	1675	2284
49	LI:765245.5:2001JAN12	6317527H1	1687	1805
49	LI:765245.5:2001JAN12	4816937H1	1699	1820
49	LI:765245.5:2001JAN12	7659960J1	1707	2185
49	LI:765245.5:2001JAN12	5597850H1	1708	1821
49	LI:765245.5:2001JAN12	6459553H2	1521	1596
49	LI:765245.5:2001JAN12	2441116H1	1526	1794
49	LI:765245.5:2001JAN12	3105957H1	1547	1805
49	LI:765245.5:2001JAN12	70287187V1	1036	1166
49	LI:765245.5:2001JAN12	6805548H1	1060	1643
49	LI:765245.5:2001JAN12	1353540F1	1441	1820
49	LI:765245.5:2001JAN12	604743H1	1445	1731
49	LI:765245.5:2001JAN12	6841152H1	1421	1842

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
49	LI:765245.5:2001JAN12	4321955H1	1429	1715
49	LI:765245.5:2001JAN12	6835075H1	1589	1805
49	LI:765245.5:2001JAN12	1443061T6	1592	2250
49	LI:765245.5:2001JAN12	6421357T8	1598	2158
49	LI:765245.5:2001JAN12	1988920R6	1598	1821
49	LI:765245.5:2001JAN12	1988920H1	1608	1821
49	LI:765245.5:2001JAN12	6605564H1	1612	1674
49	LI:765245.5:2001JAN12	3188545H1	2092	2238
49	LI:765245.5:2001JAN12	70452963V1	1088	1631
49	LI:765245.5:2001JAN12	55001225H1	1087	1513
49	LI:765245.5:2001JAN12	70453631V1	1097	1633
49	LI:765245.5:2001JAN12	55001225J2	1101	1514
49	LI:765245.5:2001JAN12	7935916H1	1099	1543
49	LI:765245.5:2001JAN12	8042949H1	1113	1371
49	LI:765245.5:2001JAN12	55037612J1	1123	1729
49	LI:765245.5:2001JAN12	7632103J1	1401	1805
49	LI:765245.5:2001JAN12	825687H1	1620	1805
49	LI:765245.5:2001JAN12	60219512D1	1628	1826
49	LI:765245.5:2001JAN12	4327019H1	1629	1821
49	LI:765245.5:2001JAN12	2666912H1	1629	1805
49	LI:765245.5:2001JAN12	705567H1	1634	1805
49	LI:765245.5:2001JAN12	6293475H1	1123	1324
49	LI:765245.5:2001JAN12	8042604J1	1144	1645
49	LI:765245.5:2001JAN12	7422489T1	1148	1356
49	LI:765245.5:2001JAN12	8044802H1	1152	1662
49	LI:765245.5:2001JAN12	55137358J1	1167	1805
49	LI:765245.5:2001JAN12	55137366H1	1170	1915
49	LI:765245.5:2001JAN12	g5633859	2092	2245
49	LI:765245.5:2001JAN12	7730530J1	1325	1820
49	LI:765245.5:2001JAN12	g5744117	1354	1472
49	LI:765245.5:2001JAN12	g6030957	1358	1480
49	LI:765245.5:2001JAN12	1217969H1	2092	2227
49	LI:765245.5:2001JAN12	3933362H1	1753	1805
49	LI:765245.5:2001JAN12	008630H1	1756	1826
49	LI:765245.5:2001JAN12	890616H1	1753	1826
49	LI:765245.5:2001JAN12	889257H1	1753	1826
49	LI:765245.5:2001JAN12	70457257V1	1661	1805
49	LI:765245.5:2001JAN12	146717H1	1489	1729
49	LI:765245.5:2001JAN12	7651088H1	1	111
49	LI:765245.5:2001JAN12	8042949J1	8	736
49	LI:765245.5:2001JAN12	7703528J1	45	697
49	LI:765245.5:2001JAN12	7711494H2	59	616
49	LI:765245.5:2001JAN12	7403504H1	77	729
49	LI:765245.5:2001JAN12	7606736J1	86	591
49	LI:765245.5:2001JAN12	70279400V1	88	556
49	LI:765245.5:2001JAN12	8040796H1	90	783
49	LI:765245.5:2001JAN12	8039196J1	170	923
49	LI:765245.5:2001JAN12	7469804H1	194	737
49	LI:765245.5:2001JAN12	7702707J2	246	895

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
49	LI:765245.5:2001JAN12	7721162H2	268	933
49	LI:765245.5:2001JAN12	8113950H1	294	986
49	LI:765245.5:2001JAN12	7761684J1	313	933
49	LI:765245.5:2001JAN12	7712422H1	334	948
49	LI:765245.5:2001JAN12	967345H1	1451	1744
49	LI:765245.5:2001JAN12	70456979V1	872	1522
49	LI:765245.5:2001JAN12	55037478J1	930	1537
49	LI:765245.5:2001JAN12	55037632J1	948	1537
49	LI:765245.5:2001JAN12	70287234V1	923	1090
49	LI:765245.5:2001JAN12	7022025H1	948	1287
49	LI:765245.5:2001JAN12	6163469H1	987	1209
49	LI:765245.5:2001JAN12	70454085V1	997	1310
49	LI:765245.5:2001JAN12	70280465V1	991	1528
49	LI:765245.5:2001JAN12	70279487V1	1033	1686
49	LI:765245.5:2001JAN12	3897531H1	554	845
49	LI:765245.5:2001JAN12	2785983H1	565	839
49	LI:765245.5:2001JAN12	6281260H1	593	870
49	LI:765245.5:2001JAN12	2435437H1	604	861
49	LI:765245.5:2001JAN12	7963211H1	612	1252
49	LI:765245.5:2001JAN12	7632103H1	633	1173
49	LI:765245.5:2001JAN12	4586093H1	668	929
49	LI:765245.5:2001JAN12	7711494J1	682	1363
49	LI:765245.5:2001JAN12	6348710F8	755	1038
49	LI:765245.5:2001JAN12	7704049H1	791	1308
49	LI:765245.5:2001JAN12	3377733H1	807	1112
49	LI:765245.5:2001JAN12	2262464H1	817	1088
49	LI:765245.5:2001JAN12	2477911H1	824	1091
49	LI:765245.5:2001JAN12	2817737H1	830	1129
49	LI:765245.5:2001JAN12	70277721V1	827	1504
49	LI:765245.5:2001JAN12	8054791J1	822	1465
49	LI:765245.5:2001JAN12	6574846H1	835	1305
49	LI:765245.5:2001JAN12	7703528H1	836	1308
49	LI:765245.5:2001JAN12	70453248V1	837	1497
49	LI:765245.5:2001JAN12	5175472H1	875	1107
49	LI:765245.5:2001JAN12	8215421H1	878	1511
49	LI:765245.5:2001JAN12	55037828J1	922	1537
49	LI:765245.5:2001JAN12	4542788H1	1579	1805
49	LI:765245.5:2001JAN12	4543188H1	1579	1805
49	LI:765245.5:2001JAN12	g1962859	1613	1826
49	LI:765245.5:2001JAN12	7163644H1	1613	1826
49	LI:765245.5:2001JAN12	6605464H1	1613	1826
49	LI:765245.5:2001JAN12	825687R1	1620	2248
49	LI:765245.5:2001JAN12	5724371H1	1565	1826
49	LI:765245.5:2001JAN12	2418292T6	1582	2213
49	LI:765245.5:2001JAN12	1437680F1	1573	1826
49	LI:765245.5:2001JAN12	1437680H1	1573	1812
49	LI:765245.5:2001JAN12	3751512H1	1653	1821
49	LI:765245.5:2001JAN12	5180475H1	1653	1805
49	LI:765245.5:2001JAN12	782083R6	1655	1826

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
49	LI:765245.5:2001JAN12	781063H1	1655	1820
49	LI:765245.5:2001JAN12	7705549J1	1194	1812
49	LI:765245.5:2001JAN12	821387H1	1216	1306
49	LI:765245.5:2001JAN12	1704790H1	1217	1444
49	LI:765245.5:2001JAN12	70457231V1	1218	1776
49	LI:765245.5:2001JAN12	55001202H1	1223	1537
49	LI:765245.5:2001JAN12	55001202J2	1223	1537
49	LI:765245.5:2001JAN12	8044802J1	1249	1662
49	LI:765245.5:2001JAN12	70279166V1	1259	1816
49	LI:765245.5:2001JAN12	70457048V1	1289	1631
49	LI:765245.5:2001JAN12	7268269H1	1301	1832
49	LI:765245.5:2001JAN12	8095617H1	1307	1805
49	LI:765245.5:2001JAN12	6421357F8	1317	1821
49	LI:765245.5:2001JAN12	70454570V1	1333	1721
49	LI:765245.5:2001JAN12	2135024H1	1175	1482
49	LI:765245.5:2001JAN12	4376671H1	1177	1467
49	LI:765245.5:2001JAN12	782082H1	1655	1805
49	LI:765245.5:2001JAN12	4805664H1	1546	1833
49	LI:765245.5:2001JAN12	7037196H1	1546	1820
49	LI:765245.5:2001JAN12	g1614054	2100	2293
49	LI:765245.5:2001JAN12	4665540H1	2111	2293
49	LI:765245.5:2001JAN12	5172864F8	2114	2324
49	LI:765245.5:2001JAN12	g5176271	2176	2293
49	LI:765245.5:2001JAN12	g1851047	2192	2298
49	LI:765245.5:2001JAN12	g1817301	2240	2292
50	LI:335608.2:2001JAN12	4770327H1	828	979
50	LI:335608.2:2001JAN12	2951210H1	809	991
50	LI:335608.2:2001JAN12	5472078H1	819	970
50	LI:335608.2:2001JAN12	2933738H1	19	275
50	LI:335608.2:2001JAN12	4047732F8	1	150
50	LI:335608.2:2001JAN12	4047920F8	1	82
50	LI:335608.2:2001JAN12	3094918H1	1	196
50	LI:335608.2:2001JAN12	3368027H1	1	205
50	LI:335608.2:2001JAN12	1238369H1	1	184
50	LI:335608.2:2001JAN12	4047732F9	7	475
50	LI:335608.2:2001JAN12	4047920H1	8	91
50	LI:335608.2:2001JAN12	4957018H1	148	469
50	LI:335608.2:2001JAN12	4957010H1	162	431
50	LI:335608.2:2001JAN12	4151552H1	180	483
50	LI:335608.2:2001JAN12	4151552F8	200	450
50	LI:335608.2:2001JAN12	g847249	240	403
50	LI:335608.2:2001JAN12	5158874H2	241	400
50	LI:335608.2:2001JAN12	g7701093	306	450
50	LI:335608.2:2001JAN12	g7701465	312	450
50	LI:335608.2:2001JAN12	3739112H1	331	450
50	LI:335608.2:2001JAN12	1553312F6	332	814
50	LI:335608.2:2001JAN12	1553312H1	332	450
50	LI:335608.2:2001JAN12	1950705H1	379	462
50	LI:335608.2:2001JAN12	1553312T6	756	1067

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
50	LI:335608.2:2001JAN12	g6642002	756	990
50	LI:335608.2:2001JAN12	g6642060	756	926
50	LI:335608.2:2001JAN12	3342492F6	768	1086
50	LI:335608.2:2001JAN12	3342492T6	768	1042
50	LI:335608.2:2001JAN12	4151552T8	768	934
50	LI:335608.2:2001JAN12	3342492H1	769	932
50	LI:335608.2:2001JAN12	6365047H1	772	967
50	LI:335608.2:2001JAN12	g6834827	787	1090
50	LI:335608.2:2001JAN12	g3424953	809	1098
51	LI:405795.1:2001JAN12	6471275H1	1809	2314
51	LI:405795.1:2001JAN12	71225976V1	1720	2226
51	LI:405795.1:2001JAN12	71226158V1	1751	2226
51	LI:405795.1:2001JAN12	71225291V1	1888	2234
51	LI:405795.1:2001JAN12	70857387V1	1688	2226
51	LI:405795.1:2001JAN12	71226017V1	1687	2226
51	LI:405795.1:2001JAN12	70856325V1	1988	2226
51	LI:405795.1:2001JAN12	70856015V1	1733	2226
51	LI:405795.1:2001JAN12	7318328H2	1733	2234
51	LI:405795.1:2001JAN12	7318236H2	1733	2233
51	LI:405795.1:2001JAN12	6466069H1	1734	2234
51	LI:405795.1:2001JAN12	7318235H2	1733	2234
51	LI:405795.1:2001JAN12	g1193060	1934	2234
51	LI:405795.1:2001JAN12	70856142V1	1724	2226
51	LI:405795.1:2001JAN12	2907964T6	1672	2195
51	LI:405795.1:2001JAN12	3650667T6	1819	2186
51	LI:405795.1:2001JAN12	7730231H1	1691	2170
51	LI:405795.1:2001JAN12	4289041H1	1864	2132
51	LI:405795.1:2001JAN12	4289041F6	1828	2132
51	LI:405795.1:2001JAN12	6022601H1	1966	2123
51	LI:405795.1:2001JAN12	70855063V1	1682	2117
51	LI:405795.1:2001JAN12	70854890V1	1687	2091
51	LI:405795.1:2001JAN12	g5741411	1078	1356
51	LI:405795.1:2001JAN12	592559H1	1071	1357
51	LI:405795.1:2001JAN12	70855772V1	1010	1356
51	LI:405795.1:2001JAN12	70855730V1	1232	1356
51	LI:405795.1:2001JAN12	70858382V1	1118	1356
51	LI:405795.1:2001JAN12	70856638V1	907	1279
51	LI:405795.1:2001JAN12	g2270788	1292	1356
51	LI:405795.1:2001JAN12	70855642V1	836	1277
51	LI:405795.1:2001JAN12	70856522V1	836	1244
51	LI:405795.1:2001JAN12	g856577	951	1242
51	LI:405795.1:2001JAN12	71225457V1	836	1145
51	LI:405795.1:2001JAN12	71225773V1	360	942
51	LI:405795.1:2001JAN12	70857273V1	360	929
51	LI:405795.1:2001JAN12	70857586V1	360	511
51	LI:405795.1:2001JAN12	70855893V1	360	511
51	LI:405795.1:2001JAN12	3650667F6	360	506
51	LI:405795.1:2001JAN12	6937646F8	136	505
51	LI:405795.1:2001JAN12	7730231J1	118	505

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
51	LI:405795.1:2001JAN12	5502112F8	1	498
51	LI:405795.1:2001JAN12	5502112H1	415	498
51	LI:405795.1:2001JAN12	3650667H1	360	496
51	LI:405795.1:2001JAN12	6937646H1	140	388
51	LI:405795.1:2001JAN12	70858395V1	1153	1770
51	LI:405795.1:2001JAN12	71225751V1	1205	1770
51	LI:405795.1:2001JAN12	70858126V1	1120	1764
51	LI:405795.1:2001JAN12	70796610V1	1420	1757
51	LI:405795.1:2001JAN12	71225768V1	1263	1367
51	LI:405795.1:2001JAN12	71225648V1	1113	1356
51	LI:405795.1:2001JAN12	70856177V1	1293	1790
51	LI:405795.1:2001JAN12	g7317479	1030	1356
51	LI:405795.1:2001JAN12	71225417V1	1093	1356
51	LI:405795.1:2001JAN12	g6568042	1039	1356
51	LI:405795.1:2001JAN12	70858515V1	1287	1885
51	LI:405795.1:2001JAN12	71225808V1	1281	1867
51	LI:405795.1:2001JAN12	70857056V1	1682	2037
51	LI:405795.1:2001JAN12	70858566V1	1682	2004
51	LI:405795.1:2001JAN12	70857338V1	1682	1980
51	LI:405795.1:2001JAN12	71225089V1	1682	1952
51	LI:405795.1:2001JAN12	2907964F6	1682	1852
51	LI:405795.1:2001JAN12	70855009V1	1682	1830
51	LI:405795.1:2001JAN12	70856566V1	1233	1805
51	LI:405795.1:2001JAN12	70857847V1	1687	2051
51	LI:405795.1:2001JAN12	3386941H1	1682	1784
51	LI:405795.1:2001JAN12	71225301V1	1247	1775
51	LI:405795.1:2001JAN12	70858661V1	1104	1774
51	LI:405795.1:2001JAN12	2907964H1	1682	1763
51	LI:405795.1:2001JAN12	71225987V1	1227	1861
51	LI:405795.1:2001JAN12	2904539H1	1286	1393
51	LI:405795.1:2001JAN12	2904539F6	1005	1392
52	LI:014872.1:2001JAN12	70965142V1	301	814
52	LI:014872.1:2001JAN12	71032124V1	301	790
52	LI:014872.1:2001JAN12	71289921V1	301	828
52	LI:014872.1:2001JAN12	3942368F6	301	730
52	LI:014872.1:2001JAN12	3946947F8	428	795
52	LI:014872.1:2001JAN12	3946947H1	429	526
52	LI:014872.1:2001JAN12	71290683V1	600	1272
52	LI:014872.1:2001JAN12	70965695V1	619	1243
52	LI:014872.1:2001JAN12	71289423V1	686	1295
52	LI:014872.1:2001JAN12	70967975V1	735	1338
52	LI:014872.1:2001JAN12	70966212V1	1064	1302
52	LI:014872.1:2001JAN12	70966121V1	1069	1302
52	LI:014872.1:2001JAN12	3942368T6	1069	1302
52	LI:014872.1:2001JAN12	6713143H1	1069	1302
52	LI:014872.1:2001JAN12	70966473V1	1071	1371
52	LI:014872.1:2001JAN12	71289069V1	1071	1217
52	LI:014872.1:2001JAN12	3946947T9	1071	1335
52	LI:014872.1:2001JAN12	71289123V1	1071	1338

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
52	LI:014872.1:2001JAN12	70973532V1	1071	1259
52	LI:014872.1:2001JAN12	g6657442	1072	1302
52	LI:014872.1:2001JAN12	70967556V1	1085	1475
52	LI:014872.1:2001JAN12	71290187V1	1085	1302
52	LI:014872.1:2001JAN12	1809438H1	1085	1245
52	LI:014872.1:2001JAN12	71032174V1	1085	1359
52	LI:014872.1:2001JAN12	g1444413	1	411
52	LI:014872.1:2001JAN12	70967057V1	301	795
52	LI:014872.1:2001JAN12	70966076V1	301	779
52	LI:014872.1:2001JAN12	70968056V1	301	795
52	LI:014872.1:2001JAN12	71288725V1	301	802
52	LI:014872.1:2001JAN12	70966101V1	301	781
52	LI:014872.1:2001JAN12	70967912V1	301	785
52	LI:014872.1:2001JAN12	3942368H1	301	486
53	LI:239245.3:2001JAN12	g2740160	2063	2568
53	LI:239245.3:2001JAN12	1696062T6	2071	2552
53	LI:239245.3:2001JAN12	1696062F6	2078	2569
53	LI:239245.3:2001JAN12	g681585	1360	1736
53	LI:239245.3:2001JAN12	4223450H1	1359	1660
53	LI:239245.3:2001JAN12	7736457H1	1361	2023
53	LI:239245.3:2001JAN12	g1390480	1363	1764
53	LI:239245.3:2001JAN12	3026050H1	1361	1472
53	LI:239245.3:2001JAN12	1664782F6	1364	1937
53	LI:239245.3:2001JAN12	1664782H1	1364	1591
53	LI:239245.3:2001JAN12	g827811	1365	1468
53	LI:239245.3:2001JAN12	2195292H1	1379	1633
53	LI:239245.3:2001JAN12	g3959041	2131	2568
53	LI:239245.3:2001JAN12	g4176013	2131	2578
53	LI:239245.3:2001JAN12	g3417870	2125	2577
53	LI:239245.3:2001JAN12	1263026R1	1357	1927
53	LI:239245.3:2001JAN12	5726394H1	1354	1815
53	LI:239245.3:2001JAN12	1263026H1	1357	1468
53	LI:239245.3:2001JAN12	2263929H1	1357	1606
53	LI:239245.3:2001JAN12	3739332H1	1169	1489
53	LI:239245.3:2001JAN12	6008053H1	1179	1446
53	LI:239245.3:2001JAN12	5531089H1	1190	1361
53	LI:239245.3:2001JAN12	1662458T6	2207	2526
53	LI:239245.3:2001JAN12	3099034H1	2229	2512
53	LI:239245.3:2001JAN12	g681500	2235	2549
53	LI:239245.3:2001JAN12	3399985H1	1839	2030
53	LI:239245.3:2001JAN12	3376607H1	1843	2105
53	LI:239245.3:2001JAN12	g2026020	1851	2039
53	LI:239245.3:2001JAN12	5120062H1	1854	2160
53	LI:239245.3:2001JAN12	3438626H1	1856	2114
53	LI:239245.3:2001JAN12	826886R1	1530	2140
53	LI:239245.3:2001JAN12	4409243H1	1548	1707
53	LI:239245.3:2001JAN12	3884794H1	2166	2422
53	LI:239245.3:2001JAN12	g6946842	2168	2572
53	LI:239245.3:2001JAN12	7941262H1	1329	1895

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
53	LI:239245.3:2001JAN12	7735339J1	1324	2017
53	LI:239245.3:2001JAN12	1557828H1	1339	1468
53	LI:239245.3:2001JAN12	7318489H1	863	1174
53	LI:239245.3:2001JAN12	7735339H1	863	1030
53	LI:239245.3:2001JAN12	g587200	2248	2568
53	LI:239245.3:2001JAN12	8093814H1	863	1262
53	LI:239245.3:2001JAN12	1662458F6	863	1175
53	LI:239245.3:2001JAN12	7737983H1	119	532
53	LI:239245.3:2001JAN12	2519285F6	123	377
53	LI:239245.3:2001JAN12	2519285H1	123	374
53	LI:239245.3:2001JAN12	3818136H1	134	428
53	LI:239245.3:2001JAN12	1910802F6	1749	2280
53	LI:239245.3:2001JAN12	1910802H1	1749	2023
53	LI:239245.3:2001JAN12	2845086H1	1760	2046
53	LI:239245.3:2001JAN12	2842537H1	1757	1878
53	LI:239245.3:2001JAN12	7754262J1	116	532
53	LI:239245.3:2001JAN12	g5865529	2164	2569
53	LI:239245.3:2001JAN12	5216370H1	2165	2416
53	LI:239245.3:2001JAN12	g4452054	2166	2575
53	LI:239245.3:2001JAN12	g5879020	2166	2573
53	LI:239245.3:2001JAN12	826886H1	1530	1847
53	LI:239245.3:2001JAN12	g3736018	2271	2568
53	LI:239245.3:2001JAN12	g2328909	2269	2570
53	LI:239245.3:2001JAN12	g6116973	2290	2556
53	LI:239245.3:2001JAN12	70876454V1	1314	1824
53	LI:239245.3:2001JAN12	5703843H1	1903	2186
53	LI:239245.3:2001JAN12	70876377V1	1903	2355
53	LI:239245.3:2001JAN12	4361570H1	1907	2196
53	LI:239245.3:2001JAN12	7754262H1	862	1205
53	LI:239245.3:2001JAN12	4543041F8	1716	2330
53	LI:239245.3:2001JAN12	4543041H1	1716	1794
53	LI:239245.3:2001JAN12	2527887H1	1720	2070
53	LI:239245.3:2001JAN12	3550484H1	1721	1929
53	LI:239245.3:2001JAN12	70874265V1	1726	2272
53	LI:239245.3:2001JAN12	2737867H1	854	1030
53	LI:239245.3:2001JAN12	4884036F6	471	532
53	LI:239245.3:2001JAN12	7731661J1	810	1430
53	LI:239245.3:2001JAN12	7317594H1	820	1473
53	LI:239245.3:2001JAN12	2657291H1	839	1075
53	LI:239245.3:2001JAN12	4545275H1	847	1030
53	LI:239245.3:2001JAN12	961661R1	853	1381
53	LI:239245.3:2001JAN12	961661H1	853	1102
53	LI:239245.3:2001JAN12	2736351H1	854	1030
53	LI:239245.3:2001JAN12	70875758V1	1831	2165
53	LI:239245.3:2001JAN12	7093989H1	88	397
53	LI:239245.3:2001JAN12	7095177H1	88	397
53	LI:239245.3:2001JAN12	555356H1	92	320
53	LI:239245.3:2001JAN12	70873807V1	1512	1806
53	LI:239245.3:2001JAN12	1298202H1	1512	1726

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
53	LI:239245.3:2001JAN12	857713R1	1525	2145
53	LI:239245.3:2001JAN12	857713H1	1525	1756
53	LI:239245.3:2001JAN12	2794287H1	1653	1978
53	LI:239245.3:2001JAN12	3885390H2	1655	1957
53	LI:239245.3:2001JAN12	624335H1	1677	1908
53	LI:239245.3:2001JAN12	7748039H1	1694	2261
53	LI:239245.3:2001JAN12	7748046H1	1694	2262
53	LI:239245.3:2001JAN12	70875390V1	1696	2187
53	LI:239245.3:2001JAN12	71077335V1	1699	1932
53	LI:239245.3:2001JAN12	684887H1	1510	1813
53	LI:239245.3:2001JAN12	1256326H1	1510	1679
53	LI:239245.3:2001JAN12	7054670H1	1512	2096
53	LI:239245.3:2001JAN12	1298202F1	1512	1942
53	LI:239245.3:2001JAN12	6310557H1	1767	2439
53	LI:239245.3:2001JAN12	3600715H1	1765	2057
53	LI:239245.3:2001JAN12	2592814H1	1773	2023
53	LI:239245.3:2001JAN12	385678H1	1778	2076
53	LI:239245.3:2001JAN12	4852963H1	1787	2080
53	LI:239245.3:2001JAN12	213146H1	1802	2039
53	LI:239245.3:2001JAN12	207370H1	1802	2028
53	LI:239245.3:2001JAN12	7924721H1	1811	2428
53	LI:239245.3:2001JAN12	g1378507	1829	2118
53	LI:239245.3:2001JAN12	027545H1	1761	1940
53	LI:239245.3:2001JAN12	6310542H1	1767	2382
53	LI:239245.3:2001JAN12	2521749H1	1153	1402
53	LI:239245.3:2001JAN12	g1970688	1169	1477
53	LI:239245.3:2001JAN12	71075977V1	1652	1829
53	LI:239245.3:2001JAN12	71078829V1	1641	1830
53	LI:239245.3:2001JAN12	70874334V1	1661	2081
53	LI:239245.3:2001JAN12	3808662H1	1254	1468
53	LI:239245.3:2001JAN12	7596425H1	1280	1747
53	LI:239245.3:2001JAN12	7596517H1	1287	1487
53	LI:239245.3:2001JAN12	70874514V1	1292	1977
53	LI:239245.3:2001JAN12	7737983J1	1298	1966
53	LI:239245.3:2001JAN12	5641551H1	1219	1460
53	LI:239245.3:2001JAN12	3372035H1	1225	1488
53	LI:239245.3:2001JAN12	2208403F6	1239	1713
53	LI:239245.3:2001JAN12	2208403H1	1239	1468
53	LI:239245.3:2001JAN12	1232232F1	1243	1882
53	LI:239245.3:2001JAN12	1232232H1	1243	1468
53	LI:239245.3:2001JAN12	2097186H1	1254	1350
53	LI:239245.3:2001JAN12	1616965H1	1984	2082
53	LI:239245.3:2001JAN12	4274892H1	1990	2266
53	LI:239245.3:2001JAN12	3217425H1	1998	2285
53	LI:239245.3:2001JAN12	3794510H1	1999	2310
53	LI:239245.3:2001JAN12	71231645V1	2012	2538
53	LI:239245.3:2001JAN12	2917810H1	2018	2191
53	LI:239245.3:2001JAN12	1662812T6	2023	2532
53	LI:239245.3:2001JAN12	g3959977	2025	2208

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
53	LI:239245.3:2001JAN12	2939339H1	2050	2297
53	LI:239245.3:2001JAN12	71076381V1	2054	2242
53	LI:239245.3:2001JAN12	7618579J1	346	532
53	LI:239245.3:2001JAN12	6585411H1	428	532
53	LI:239245.3:2001JAN12	7735630J1	452	1057
53	LI:239245.3:2001JAN12	4884036H1	471	540
53	LI:239245.3:2001JAN12	5721616H1	1086	1451
53	LI:239245.3:2001JAN12	3009701H1	1086	1290
53	LI:239245.3:2001JAN12	8181792H1	1147	1774
53	LI:239245.3:2001JAN12	7092994H1	88	397
53	LI:239245.3:2001JAN12	71232340V1	1645	2115
53	LI:239245.3:2001JAN12	g1685867	2134	2574
53	LI:239245.3:2001JAN12	g6838404	2149	2568
53	LI:239245.3:2001JAN12	g3883938	2151	2563
53	LI:239245.3:2001JAN12	1617213H1	2156	2373
53	LI:239245.3:2001JAN12	1617284H1	2156	2362
53	LI:239245.3:2001JAN12	g1378402	2158	2565
53	LI:239245.3:2001JAN12	g2907599	2160	2570
53	LI:239245.3:2001JAN12	g1368095	2162	2569
53	LI:239245.3:2001JAN12	7655349H1	955	1249
53	LI:239245.3:2001JAN12	2584851H1	957	1223
53	LI:239245.3:2001JAN12	3290971H1	969	1235
53	LI:239245.3:2001JAN12	1702825H1	972	1172
53	LI:239245.3:2001JAN12	1966577R6	976	1304
53	LI:239245.3:2001JAN12	1966577H1	976	1230
53	LI:239245.3:2001JAN12	2840445H1	1044	1291
53	LI:239245.3:2001JAN12	3371148H1	1071	1340
53	LI:239245.3:2001JAN12	7341833H1	1076	1582
53	LI:239245.3:2001JAN12	g1639712	1079	1419
53	LI:239245.3:2001JAN12	70874892V1	1086	1675
53	LI:239245.3:2001JAN12	1256326F1	1510	1876
53	LI:239245.3:2001JAN12	2846001H1	1631	1931
53	LI:239245.3:2001JAN12	g2011313	1634	2052
53	LI:239245.3:2001JAN12	2846005H1	1631	1933
53	LI:239245.3:2001JAN12	70874202V1	1500	2079
53	LI:239245.3:2001JAN12	g4988929	1504	2008
53	LI:239245.3:2001JAN12	g4080167	1504	1944
53	LI:239245.3:2001JAN12	1954746H1	1505	1758
53	LI:239245.3:2001JAN12	5732588H1	1504	1749
53	LI:239245.3:2001JAN12	4657133H2	1506	1759
53	LI:239245.3:2001JAN12	g3741631	2178	2574
53	LI:239245.3:2001JAN12	7367941H1	2178	2569
53	LI:239245.3:2001JAN12	7334888H1	2182	2572
53	LI:239245.3:2001JAN12	g4997973	2190	2572
53	LI:239245.3:2001JAN12	g3649391	2191	2583
53	LI:239245.3:2001JAN12	7653736H1	863	1030
53	LI:239245.3:2001JAN12	g677683	863	1010
53	LI:239245.3:2001JAN12	3746982H1	863	968
53	LI:239245.3:2001JAN12	3600609H1	863	963

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
53	LI:239245.3:2001JAN12	923998H1	863	956
53	LI:239245.3:2001JAN12	5066463H1	863	956
53	LI:239245.3:2001JAN12	2820190F6	866	1322
53	LI:239245.3:2001JAN12	2820190H1	866	1084
53	LI:239245.3:2001JAN12	2527015H1	866	1044
53	LI:239245.3:2001JAN12	1662845H1	866	1026
53	LI:239245.3:2001JAN12	1602695H1	866	970
53	LI:239245.3:2001JAN12	908279H1	884	1018
53	LI:239245.3:2001JAN12	g654291	894	1139
53	LI:239245.3:2001JAN12	3190503H1	921	1229
53	LI:239245.3:2001JAN12	3190494H1	921	1159
53	LI:239245.3:2001JAN12	3338674H1	922	1171
53	LI:239245.3:2001JAN12	4916345H1	945	1244
53	LI:239245.3:2001JAN12	1255777H1	950	1194
53	LI:239245.3:2001JAN12	1442744H1	340	532
53	LI:239245.3:2001JAN12	g3277690	2125	2575
53	LI:239245.3:2001JAN12	5648193H1	1975	2413
53	LI:239245.3:2001JAN12	1616909H1	1984	2229
53	LI:239245.3:2001JAN12	210406H1	1958	2142
53	LI:239245.3:2001JAN12	1966577T6	1962	2538
53	LI:239245.3:2001JAN12	5050857H1	1963	2218
53	LI:239245.3:2001JAN12	5873551H1	1913	2211
53	LI:239245.3:2001JAN12	2820190T6	1949	2525
53	LI:239245.3:2001JAN12	978588H1	1951	2252
53	LI:239245.3:2001JAN12	978588R1	1953	2308
53	LI:239245.3:2001JAN12	4202459H1	1889	2166
53	LI:239245.3:2001JAN12	5701154H1	1903	2184
53	LI:239245.3:2001JAN12	7653736J1	235	431
53	LI:239245.3:2001JAN12	1621168H1	206	437
53	LI:239245.3:2001JAN12	7731661H1	155	532
53	LI:239245.3:2001JAN12	4140667H1	182	473
53	LI:239245.3:2001JAN12	7726218H1	191	447
53	LI:239245.3:2001JAN12	7726218J1	192	447
53	LI:239245.3:2001JAN12	7255960H2	144	532
53	LI:239245.3:2001JAN12	g3539348	1	374
53	LI:239245.3:2001JAN12	g3931954	1	369
53	LI:239245.3:2001JAN12	776737H1	68	120
53	LI:239245.3:2001JAN12	1985067H1	76	345
53	LI:239245.3:2001JAN12	70876515V1	1550	2105
53	LI:239245.3:2001JAN12	70874022V1	1571	2180
53	LI:239245.3:2001JAN12	3864706H1	1563	1941
53	LI:239245.3:2001JAN12	70875501V1	1580	1915
53	LI:239245.3:2001JAN12	2102912H1	1590	1864
53	LI:239245.3:2001JAN12	71076168V1	1593	1860
53	LI:239245.3:2001JAN12	71078401V1	1600	2023
53	LI:239245.3:2001JAN12	1300869H1	1601	1870
53	LI:239245.3:2001JAN12	g1685978	1606	1939
53	LI:239245.3:2001JAN12	g2026868	1611	1979
53	LI:239245.3:2001JAN12	6162750H1	1623	2183

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
53	LI:239245.3:2001JAN12	2597777H1	1618	1922
53	LI:239245.3:2001JAN12	g1373526	1623	2083
53	LI:239245.3:2001JAN12	7182776H1	1625	2192
53	LI:239245.3:2001JAN12	7182777H1	1625	2208
53	LI:239245.3:2001JAN12	7182380H1	1625	2096
53	LI:239245.3:2001JAN12	7182715H1	1625	2164
53	LI:239245.3:2001JAN12	g2279137	2081	2570
53	LI:239245.3:2001JAN12	g2360853	2082	2567
53	LI:239245.3:2001JAN12	878611T1	2084	2526
53	LI:239245.3:2001JAN12	878611R1	2084	2471
53	LI:239245.3:2001JAN12	878611H1	2084	2326
53	LI:239245.3:2001JAN12	g4833713	2092	2569
53	LI:239245.3:2001JAN12	212294H1	2097	2321
53	LI:239245.3:2001JAN12	1696062H1	2078	2301
53	LI:239245.3:2001JAN12	702577H1	1414	1657
53	LI:239245.3:2001JAN12	5732556H1	1467	1726
53	LI:239245.3:2001JAN12	70874813V1	1486	2161
53	LI:239245.3:2001JAN12	70873366V1	1494	2015
53	LI:239245.3:2001JAN12	7746913H1	1378	2004
53	LI:239245.3:2001JAN12	70874721V1	1390	1736
53	LI:239245.3:2001JAN12	70874010V1	1394	1941
53	LI:239245.3:2001JAN12	71231919V1	1404	2088
53	LI:239245.3:2001JAN12	7618579H1	1398	2040
53	LI:239245.3:2001JAN12	4137232H1	1409	1718
53	LI:239245.3:2001JAN12	7736457J1	143	532
53	LI:239245.3:2001JAN12	g2670184	2495	2565
53	LI:239245.3:2001JAN12	2956393H1	2249	2532
53	LI:239245.3:2001JAN12	2955719H1	2249	2531
53	LI:239245.3:2001JAN12	g3932853	2252	2572
53	LI:239245.3:2001JAN12	g3202786	2255	2569
53	LI:239245.3:2001JAN12	g3679306	2256	2563
53	LI:239245.3:2001JAN12	g1994399	2269	2569
53	LI:239245.3:2001JAN12	g1390701	2268	2557
53	LI:239245.3:2001JAN12	2503776H1	2335	2569
53	LI:239245.3:2001JAN12	5326624H1	2311	2562
53	LI:239245.3:2001JAN12	g654218	2327	2575
53	LI:239245.3:2001JAN12	2504103H1	2335	2538
53	LI:239245.3:2001JAN12	g2674844	2404	2583
53	LI:239245.3:2001JAN12	g2563163	2381	2568
53	LI:239245.3:2001JAN12	2519285T6	2395	2633
53	LI:239245.3:2001JAN12	3703849H1	2397	2569
53	LI:239245.3:2001JAN12	1910802T6	2409	2533
53	LI:239245.3:2001JAN12	2883983H1	2433	2569
53	LI:239245.3:2001JAN12	2756734H1	2457	2569
53	LI:239245.3:2001JAN12	g3049728	2487	2563
54	LI:142384.5:2001JAN12	7603466H1	2612	3069
54	LI:142384.5:2001JAN12	g7155580	2612	3039
54	LI:142384.5:2001JAN12	g6641619	2660	3055
54	LI:142384.5:2001JAN12	g7701867	2668	3055

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
54	LI:142384.5:2001JAN12	7168104H1	2673	3030
54	LI:142384.5:2001JAN12	7692414J1	2702	3007
54	LI:142384.5:2001JAN12	g8008089	2734	3055
54	LI:142384.5:2001JAN12	7957058J1	2516	2933
54	LI:142384.5:2001JAN12	8036889J1	571	1163
54	LI:142384.5:2001JAN12	7400862H1	623	1127
54	LI:142384.5:2001JAN12	7380279H1	675	1246
54	LI:142384.5:2001JAN12	7582606H1	693	1129
54	LI:142384.5:2001JAN12	7720989H1	704	1315
54	LI:142384.5:2001JAN12	8324749J1	765	1190
54	LI:142384.5:2001JAN12	7725609H1	767	1239
54	LI:142384.5:2001JAN12	8002540H1	775	1401
54	LI:142384.5:2001JAN12	7440540H1	560	1148
54	LI:142384.5:2001JAN12	6991082H1	53	274
54	LI:142384.5:2001JAN12	g4195018	56	224
54	LI:142384.5:2001JAN12	g5444909	62	196
54	LI:142384.5:2001JAN12	g4736683	62	531
54	LI:142384.5:2001JAN12	g5765521	62	542
54	LI:142384.5:2001JAN12	g5110384	62	537
54	LI:142384.5:2001JAN12	g5744052	80	524
54	LI:142384.5:2001JAN12	7181281H1	85	634
54	LI:142384.5:2001JAN12	7586630H1	314	807
54	LI:142384.5:2001JAN12	7734637H1	331	842
54	LI:142384.5:2001JAN12	7633218H1	363	621
54	LI:142384.5:2001JAN12	7702987J1	361	573
54	LI:142384.5:2001JAN12	7633218J1	391	620
54	LI:142384.5:2001JAN12	3801178H1	366	564
54	LI:142384.5:2001JAN12	6606927H1	422	806
54	LI:142384.5:2001JAN12	5725556H1	465	939
54	LI:142384.5:2001JAN12	7721053J1	536	1154
54	LI:142384.5:2001JAN12	8002558H1	775	1449
54	LI:142384.5:2001JAN12	7726134J1	782	1004
54	LI:142384.5:2001JAN12	7726134H1	782	1004
54	LI:142384.5:2001JAN12	8081712U1	847	1484
54	LI:142384.5:2001JAN12	8268318H1	847	1301
54	LI:142384.5:2001JAN12	6459774H1	854	1149
54	LI:142384.5:2001JAN12	7717159J1	955	1589
54	LI:142384.5:2001JAN12	7717159H1	1039	1620
54	LI:142384.5:2001JAN12	7621301J1	1069	1705
54	LI:142384.5:2001JAN12	8024879J1	1075	1728
54	LI:142384.5:2001JAN12	7994967H1	1122	1796
54	LI:142384.5:2001JAN12	7693912J2	1137	1670
54	LI:142384.5:2001JAN12	7725609J1	1159	1826
54	LI:142384.5:2001JAN12	7940154H1	1211	1768
54	LI:142384.5:2001JAN12	7698739H1	1359	1994
54	LI:142384.5:2001JAN12	7329095H1	1552	2101
54	LI:142384.5:2001JAN12	7723473J2	1540	1994
54	LI:142384.5:2001JAN12	7328977H1	1552	1931
54	LI:142384.5:2001JAN12	7329035H1	1552	2203

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
54	LI:142384.5:2001JAN12	7329094H1	1552	2126
54	LI:142384.5:2001JAN12	55004912J1	1586	2270
54	LI:142384.5:2001JAN12	7691638H2	1609	2228
54	LI:142384.5:2001JAN12	7957058H1	1612	2239
54	LI:142384.5:2001JAN12	g6642420	1780	2135
54	LI:142384.5:2001JAN12	7692414H1	2099	2402
54	LI:142384.5:2001JAN12	8174401H1	2240	2847
54	LI:142384.5:2001JAN12	g6663726	2304	2734
54	LI:142384.5:2001JAN12	7732738H2	1	606
54	LI:142384.5:2001JAN12	8015486J2	47	135
55	LI:2068768.1:2001JAN12	8265489J1	1	509
56	LI:2118074.1:2001JAN12	716460H1	467	546
56	LI:2118074.1:2001JAN12	718453R6	467	533
56	LI:2118074.1:2001JAN12	3918663H1	246	550
56	LI:2118074.1:2001JAN12	3916704T6	430	520
56	LI:2118074.1:2001JAN12	718453H1	467	546
56	LI:2118074.1:2001JAN12	5181606H1	230	429
56	LI:2118074.1:2001JAN12	3918663F6	245	538
56	LI:2118074.1:2001JAN12	7267407H1	28	538
56	LI:2118074.1:2001JAN12	3918663T6	192	525
56	LI:2118074.1:2001JAN12	7996451H1	1	316
56	LI:2118074.1:2001JAN12	6909385J1	1	326
56	LI:2118074.1:2001JAN12	60203273D1	1	392
57	LI:1189068.4:2001JAN12	g645158	1270	1403
57	LI:1189068.4:2001JAN12	g5630439	1517	1966
57	LI:1189068.4:2001JAN12	5059372H1	1405	1519
57	LI:1189068.4:2001JAN12	g6711918	1503	1966
57	LI:1189068.4:2001JAN12	6360191F8	1276	1853
57	LI:1189068.4:2001JAN12	g566699	1124	1403
57	LI:1189068.4:2001JAN12	833564T1	737	1357
57	LI:1189068.4:2001JAN12	1941404H1	1352	1403
57	LI:1189068.4:2001JAN12	5974157H1	568	1153
57	LI:1189068.4:2001JAN12	082766H1	738	918
57	LI:1189068.4:2001JAN12	g6662399	1535	1966
57	LI:1189068.4:2001JAN12	g6836688	1535	1960
57	LI:1189068.4:2001JAN12	5290635T9	516	1112
57	LI:1189068.4:2001JAN12	g810895	445	785
57	LI:1189068.4:2001JAN12	5295053H1	323	586
57	LI:1189068.4:2001JAN12	6155906F8	325	768
57	LI:1189068.4:2001JAN12	5515480F8	345	524
57	LI:1189068.4:2001JAN12	3868687H1	367	628
57	LI:1189068.4:2001JAN12	2211930F6	441	787
57	LI:1189068.4:2001JAN12	2211930H1	441	704
57	LI:1189068.4:2001JAN12	g1859174	150	646
57	LI:1189068.4:2001JAN12	1213686H1	158	395
57	LI:1189068.4:2001JAN12	5515480H1	303	539
57	LI:1189068.4:2001JAN12	6155906H1	324	659
57	LI:1189068.4:2001JAN12	2656627F6	1245	1826
57	LI:1189068.4:2001JAN12	2656627H1	1245	1491

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
57	LI:1189068.4:2001JAN12	2656627T6	1522	1913
57	LI:1189068.4:2001JAN12	g518870	1092	1403
57	LI:1189068.4:2001JAN12	6519409F8	959	1404
57	LI:1189068.4:2001JAN12	g2269520	1659	1957
57	LI:1189068.4:2001JAN12	4777370F6	8	596
57	LI:1189068.4:2001JAN12	6519509H1	959	1403
57	LI:1189068.4:2001JAN12	6519409H1	959	1403
57	LI:1189068.4:2001JAN12	6360191H2	1226	1519
57	LI:1189068.4:2001JAN12	833564H1	737	1005
57	LI:1189068.4:2001JAN12	2657059F6	935	1525
57	LI:1189068.4:2001JAN12	833564R6	737	1222
57	LI:1189068.4:2001JAN12	2657059T6	1523	1917
57	LI:1189068.4:2001JAN12	g670756	1126	1403
57	LI:1189068.4:2001JAN12	g4196245	1146	1522
57	LI:1189068.4:2001JAN12	g2806335	834	1228
57	LI:1189068.4:2001JAN12	g810793	876	1224
57	LI:1189068.4:2001JAN12	3792243H1	888	1206
57	LI:1189068.4:2001JAN12	3144266H1	895	1239
57	LI:1189068.4:2001JAN12	2657059H1	935	1209
57	LI:1189068.4:2001JAN12	8213631H1	788	1244
57	LI:1189068.4:2001JAN12	833564T6	803	1363
57	LI:1189068.4:2001JAN12	g2657163	809	1224
57	LI:1189068.4:2001JAN12	2211930T6	809	1358
57	LI:1189068.4:2001JAN12	7254540T8	832	1195
57	LI:1189068.4:2001JAN12	8188401H1	1	496
57	LI:1189068.4:2001JAN12	5095219F6	1	465
58	LI:2118704.1:2001JAN12	2524694F6	666	1021
58	LI:2118704.1:2001JAN12	2518322H1	666	913
58	LI:2118704.1:2001JAN12	2524694H1	666	824
58	LI:2118704.1:2001JAN12	1624078H1	967	1021
58	LI:2118704.1:2001JAN12	5166183F6	388	695
58	LI:2118704.1:2001JAN12	5166183H1	393	535
58	LI:2118704.1:2001JAN12	7628180H1	389	596
58	LI:2118704.1:2001JAN12	2202388H1	389	507
58	LI:2118704.1:2001JAN12	6871950H1	396	878
58	LI:2118704.1:2001JAN12	2523017F6	441	773
58	LI:2118704.1:2001JAN12	2523017H1	441	650
58	LI:2118704.1:2001JAN12	2890710H1	443	731
58	LI:2118704.1:2001JAN12	7628180J1	440	986
58	LI:2118704.1:2001JAN12	g2840187	486	796
58	LI:2118704.1:2001JAN12	2202388T6	651	986
58	LI:2118704.1:2001JAN12	2518322F7	666	986
58	LI:2118704.1:2001JAN12	4397970F6	1	532
58	LI:2118704.1:2001JAN12	g2787504	235	691
58	LI:2118704.1:2001JAN12	4397970H1	290	538
58	LI:2118704.1:2001JAN12	3454425H1	347	600
58	LI:2118704.1:2001JAN12	2202388F6	369	585
59	LI:031700.2:2001JAN12	71814993V1	1862	2469
59	LI:031700.2:2001JAN12	72330941V1	1890	2461

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
59	LI:031700.2:2001JAN12	71816222V1	1893	2461
59	LI:031700.2:2001JAN12	g4899044	1912	2074
59	LI:031700.2:2001JAN12	72330260V1	1958	2475
59	LI:031700.2:2001JAN12	8054109J1	1955	2476
59	LI:031700.2:2001JAN12	8053826J1	1984	2542
59	LI:031700.2:2001JAN12	71815268V1	1999	2494
59	LI:031700.2:2001JAN12	7612121H1	169	753
59	LI:031700.2:2001JAN12	71816720V1	368	1037
59	LI:031700.2:2001JAN12	g5361647	464	925
59	LI:031700.2:2001JAN12	71816807V1	474	971
59	LI:031700.2:2001JAN12	7382885H1	487	1098
59	LI:031700.2:2001JAN12	g723812	579	863
59	LI:031700.2:2001JAN12	g989634	579	685
59	LI:031700.2:2001JAN12	72330437V1	615	1166
59	LI:031700.2:2001JAN12	3449384T6	624	913
59	LI:031700.2:2001JAN12	71816306V1	662	1349
59	LI:031700.2:2001JAN12	71812054V1	738	1273
59	LI:031700.2:2001JAN12	5735756H1	1080	1365
59	LI:031700.2:2001JAN12	71817423V1	1783	2476
59	LI:031700.2:2001JAN12	71817008V1	1818	2469
59	LI:031700.2:2001JAN12	71812659V1	773	1456
59	LI:031700.2:2001JAN12	7382915H1	806	1442
59	LI:031700.2:2001JAN12	72331433V1	810	1550
59	LI:031700.2:2001JAN12	71815440V1	855	1533
59	LI:031700.2:2001JAN12	72331268V1	854	1626
59	LI:031700.2:2001JAN12	71813771V1	864	1609
59	LI:031700.2:2001JAN12	7612121J1	898	1641
59	LI:031700.2:2001JAN12	71815281V1	949	1518
59	LI:031700.2:2001JAN12	g2836715	1037	1594
59	LI:031700.2:2001JAN12	72330949V1	1834	2467
59	LI:031700.2:2001JAN12	71814995V1	1852	2440
59	LI:031700.2:2001JAN12	71816725V1	1861	2074
59	LI:031700.2:2001JAN12	g5410526	1	1064
59	LI:031700.2:2001JAN12	7385009H1	62	562
59	LI:031700.2:2001JAN12	71816239V1	118	721
59	LI:031700.2:2001JAN12	71816469V1	121	751
59	LI:031700.2:2001JAN12	2779672H1	119	358
59	LI:031700.2:2001JAN12	71812417V1	1771	2420
59	LI:031700.2:2001JAN12	71812188V1	1779	2476
59	LI:031700.2:2001JAN12	71812911V1	1740	2074
59	LI:031700.2:2001JAN12	71817140V1	1755	2074
59	LI:031700.2:2001JAN12	71816483V1	1652	2074
59	LI:031700.2:2001JAN12	72331263V1	1678	2473
59	LI:031700.2:2001JAN12	71813848V1	1728	2074
59	LI:031700.2:2001JAN12	71816862V1	1601	2112
59	LI:031700.2:2001JAN12	71816530V1	1642	2074
59	LI:031700.2:2001JAN12	3055874F6	1549	2072
59	LI:031700.2:2001JAN12	3055874H1	1541	1866
59	LI:031700.2:2001JAN12	71813962V1	1516	2074

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
59	LI:031700.2:2001JAN12	72331056V1	1542	2466
59	LI:031700.2:2001JAN12	71816166V1	1545	2278
59	LI:031700.2:2001JAN12	7613726J1	1537	2019
59	LI:031700.2:2001JAN12	g4989505	1391	1599
59	LI:031700.2:2001JAN12	71812104V1	1467	2074
59	LI:031700.2:2001JAN12	71814738V1	1462	2122
59	LI:031700.2:2001JAN12	71815933V1	1490	2097
59	LI:031700.2:2001JAN12	72330451V1	1369	2059
59	LI:031700.2:2001JAN12	g723724	1362	1568
59	LI:031700.2:2001JAN12	71813291V1	1322	2137
59	LI:031700.2:2001JAN12	72330533V1	1353	2074
59	LI:031700.2:2001JAN12	8051185J1	1325	1944
59	LI:031700.2:2001JAN12	g3239050	1261	1594
59	LI:031700.2:2001JAN12	71814994V1	1306	2124
59	LI:031700.2:2001JAN12	71814294V1	1262	1987
59	LI:031700.2:2001JAN12	72330047V1	1252	2112
59	LI:031700.2:2001JAN12	71815235V1	1256	1809
59	LI:031700.2:2001JAN12	g989387	1235	1600
59	LI:031700.2:2001JAN12	7384726H1	1162	1656
59	LI:031700.2:2001JAN12	g3869909	1127	1594
59	LI:031700.2:2001JAN12	6940762H1	1148	1586
60	LI:2120122.1:2001JAN12	1258839F6	1	224
60	LI:2120122.1:2001JAN12	1258839H1	1	58
60	LI:2120122.1:2001JAN12	1711906F6	7	581
60	LI:2120122.1:2001JAN12	1711906H1	7	251
60	LI:2120122.1:2001JAN12	6609761T1	163	789
60	LI:2120122.1:2001JAN12	6100447T8	180	738
60	LI:2120122.1:2001JAN12	4178425H1	201	459
60	LI:2120122.1:2001JAN12	2611213H1	254	513
60	LI:2120122.1:2001JAN12	734585H1	522	869
60	LI:2120122.1:2001JAN12	g4511516	549	892
60	LI:2120122.1:2001JAN12	g6704462	548	985
60	LI:2120122.1:2001JAN12	6823416H1	561	730
60	LI:2120122.1:2001JAN12	4492679H1	564	938
60	LI:2120122.1:2001JAN12	6863284H1	571	899
60	LI:2120122.1:2001JAN12	g1784877	564	984
60	LI:2120122.1:2001JAN12	1711906T6	564	838
60	LI:2120122.1:2001JAN12	6823416J1	564	730
60	LI:2120122.1:2001JAN12	6729502H1	574	881
60	LI:2120122.1:2001JAN12	g4511515	686	892
60	LI:2120122.1:2001JAN12	6166979H1	313	805
60	LI:2120122.1:2001JAN12	1693336T6	363	841
60	LI:2120122.1:2001JAN12	g1485273	444	566
60	LI:2120122.1:2001JAN12	1964040H1	282	575
60	LI:2120122.1:2001JAN12	2729170F6	704	1267
60	LI:2120122.1:2001JAN12	2729170H1	704	957
60	LI:2120122.1:2001JAN12	70056759D1	704	855
60	LI:2120122.1:2001JAN12	8268383H1	733	1270
60	LI:2120122.1:2001JAN12	3105641H1	723	995

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
60	LI:2120122.1:2001JAN12	70055711D1	795	1251
60	LI:2120122.1:2001JAN12	70052175D1	794	1252
60	LI:2120122.1:2001JAN12	70054842D1	794	1127
60	LI:2120122.1:2001JAN12	70054961D1	1080	1382
60	LI:2120122.1:2001JAN12	70052633D1	1080	1190
60	LI:2120122.1:2001JAN12	2939044H1	1089	1367
60	LI:2120122.1:2001JAN12	g2574938	1144	1585
60	LI:2120122.1:2001JAN12	2729170T6	1235	1448
60	LI:2120122.1:2001JAN12	g6074577	1270	1587
60	LI:2120122.1:2001JAN12	g4523712	1293	1702
60	LI:2120122.1:2001JAN12	g4630200	1298	1759
60	LI:2120122.1:2001JAN12	2584559H1	1367	1503
60	LI:2120122.1:2001JAN12	2926785H1	1513	1771
60	LI:2120122.1:2001JAN12	3358690H1	1544	1815
61	LI:816174.1:2001JAN12	4851229T6	634	1011
61	LI:816174.1:2001JAN12	3090895F6	663	1032
61	LI:816174.1:2001JAN12	3090895H1	663	932
61	LI:816174.1:2001JAN12	4533630T6	726	984
61	LI:816174.1:2001JAN12	4533630T1	799	981
61	LI:816174.1:2001JAN12	5768483H1	868	1035
61	LI:816174.1:2001JAN12	3815138F6	1	132
61	LI:816174.1:2001JAN12	4851229F6	1	567
61	LI:816174.1:2001JAN12	4851229H1	1	171
61	LI:816174.1:2001JAN12	4533630F6	355	879
61	LI:816174.1:2001JAN12	4533630H1	355	600
61	LI:816174.1:2001JAN12	3048461F6	410	691
61	LI:816174.1:2001JAN12	3048461H1	410	521
61	LI:816174.1:2001JAN12	2326709H1	410	510
61	LI:816174.1:2001JAN12	g4834090	515	973
62	LI:1189569.11:2001JAN12	6986150H1	1	353
62	LI:1189569.11:2001JAN12	6986150F6	1	629
62	LI:1189569.11:2001JAN12	6986150F8	1	501
62	LI:1189569.11:2001JAN12	6986150R8	71	702
62	LI:1189569.11:2001JAN12	8097603H1	353	915
63	LI:413584.1:2001JAN12	2467209H1	672	922
63	LI:413584.1:2001JAN12	g1921189	495	923
63	LI:413584.1:2001JAN12	70774327V1	311	920
63	LI:413584.1:2001JAN12	70773925V1	368	917
63	LI:413584.1:2001JAN12	70773729V1	826	1304
63	LI:413584.1:2001JAN12	7637319J1	1051	1337
63	LI:413584.1:2001JAN12	70773280V1	840	1304
63	LI:413584.1:2001JAN12	70774789V1	858	1304
63	LI:413584.1:2001JAN12	70771412V1	1001	1304
63	LI:413584.1:2001JAN12	g4244609	780	1294
63	LI:413584.1:2001JAN12	70771111V1	820	1304
63	LI:413584.1:2001JAN12	70770373V1	512	803
63	LI:413584.1:2001JAN12	70773074V1	311	814
63	LI:413584.1:2001JAN12	70773935V1	701	1304
63	LI:413584.1:2001JAN12	70774137V1	658	1304

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
63	LI:413584.1:2001JAN12	70774984V1	672	1304
63	LI:413584.1:2001JAN12	70774521V1	676	1304
63	LI:413584.1:2001JAN12	70772323V1	738	1304
63	LI:413584.1:2001JAN12	70771082V1	492	1087
63	LI:413584.1:2001JAN12	g5361655	855	1267
63	LI:413584.1:2001JAN12	g4085276	778	1264
63	LI:413584.1:2001JAN12	g4194451	815	1264
63	LI:413584.1:2001JAN12	g6026890	780	1264
63	LI:413584.1:2001JAN12	70774431V1	784	1304
63	LI:413584.1:2001JAN12	7435246H1	31	631
63	LI:413584.1:2001JAN12	3171692H1	312	589
63	LI:413584.1:2001JAN12	8131441H1	54	422
63	LI:413584.1:2001JAN12	71365090V1	1	401
63	LI:413584.1:2001JAN12	71206006V1	1	300
63	LI:413584.1:2001JAN12	71308835V1	1	176
63	LI:413584.1:2001JAN12	553417H1	29	113
63	LI:413584.1:2001JAN12	7656216J1	437	1059
63	LI:413584.1:2001JAN12	6307458H1	468	1025
63	LI:413584.1:2001JAN12	71368238V1	1	645
63	LI:413584.1:2001JAN12	70769797V1	522	1085
63	LI:413584.1:2001JAN12	6308794H1	496	1074
63	LI:413584.1:2001JAN12	7346614H1	486	1064
63	LI:413584.1:2001JAN12	5773045H1	486	1068
63	LI:413584.1:2001JAN12	4132085H1	492	754
63	LI:413584.1:2001JAN12	6885585J1	353	955
63	LI:413584.1:2001JAN12	70769713V1	480	966
63	LI:413584.1:2001JAN12	6312575H1	466	1008
63	LI:413584.1:2001JAN12	7610034J1	359	960
63	LI:413584.1:2001JAN12	g3423288	848	1284
63	LI:413584.1:2001JAN12	70770006V1	773	1304
63	LI:413584.1:2001JAN12	g3003180	1007	1310
63	LI:413584.1:2001JAN12	g6697820	829	1311
63	LI:413584.1:2001JAN12	70772120V1	844	1304
63	LI:413584.1:2001JAN12	g4187987	786	1294
63	LI:413584.1:2001JAN12	g3960800	894	1294
63	LI:413584.1:2001JAN12	70773477V1	817	1304
63	LI:413584.1:2001JAN12	70772461V1	793	1304
63	LI:413584.1:2001JAN12	70769697V1	798	1304
63	LI:413584.1:2001JAN12	70771930V1	790	1304
63	LI:413584.1:2001JAN12	6885585R8	427	929
63	LI:413584.1:2001JAN12	g6705011	887	1311
63	LI:413584.1:2001JAN12	7637173J1	1030	1337
63	LI:413584.1:2001JAN12	3218219H1	461	747
63	LI:413584.1:2001JAN12	3036496H1	460	747
63	LI:413584.1:2001JAN12	70771754V1	311	885
63	LI:413584.1:2001JAN12	6350535H2	494	852
63	LI:413584.1:2001JAN12	70773414V1	512	837
63	LI:413584.1:2001JAN12	70774922V1	311	822
63	LI:413584.1:2001JAN12	70770789V1	311	819

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
63	LI:413584.1:2001JAN12	6431183H1	390	1039
63	LI:413584.1:2001JAN12	3218219F6	461	953
63	LI:413584.1:2001JAN12	g2780078	761	1264
63	LI:413584.1:2001JAN12	g5855804	783	1264
63	LI:413584.1:2001JAN12	g4486195	783	1264
63	LI:413584.1:2001JAN12	g5435848	780	1264
63	LI:413584.1:2001JAN12	g4153033	780	1264
63	LI:413584.1:2001JAN12	g5707121	801	1264
63	LI:413584.1:2001JAN12	g1921290	835	1264
63	LI:413584.1:2001JAN12	g2875987	864	1264
63	LI:413584.1:2001JAN12	g3807691	874	1264
63	LI:413584.1:2001JAN12	g3053036	933	1264
63	LI:413584.1:2001JAN12	g3934952	951	1264
63	LI:413584.1:2001JAN12	g3052574	1030	1264
63	LI:413584.1:2001JAN12	70773765V1	660	1220
63	LI:413584.1:2001JAN12	7656216H1	469	1103
63	LI:413584.1:2001JAN12	g4187953	834	1297
63	LI:413584.1:2001JAN12	g3934448	849	1316
63	LI:413584.1:2001JAN12	g6993277	891	1311
63	LI:413584.1:2001JAN12	3171692F6	311	799
63	LI:413584.1:2001JAN12	70769865V1	310	775
63	LI:413584.1:2001JAN12	3458884H1	439	684
63	LI:413584.1:2001JAN12	4977402H1	479	744
63	LI:413584.1:2001JAN12	70771530V1	627	741
64	LI:791042.1:2001JAN12	70247187V1	9	376
64	LI:791042.1:2001JAN12	70249011V1	65	131
64	LI:791042.1:2001JAN12	5315867H1	588	646
64	LI:791042.1:2001JAN12	5315867F8	588	646
64	LI:791042.1:2001JAN12	5318888F8	595	646
64	LI:791042.1:2001JAN12	g3110195	633	1096
64	LI:791042.1:2001JAN12	g2806538	704	1094
64	LI:791042.1:2001JAN12	g3179231	756	1102
64	LI:791042.1:2001JAN12	g3237896	768	1093
64	LI:791042.1:2001JAN12	6790119H1	964	1463
64	LI:791042.1:2001JAN12	6790119J1	964	1066
64	LI:791042.1:2001JAN12	70248842V1	5	344
64	LI:791042.1:2001JAN12	70249121V1	18	344
64	LI:791042.1:2001JAN12	70251547V1	9	416
64	LI:791042.1:2001JAN12	2426674H1	1	242
64	LI:791042.1:2001JAN12	70248658V1	1	264
64	LI:791042.1:2001JAN12	70249235V1	1	322
64	LI:791042.1:2001JAN12	70251664V1	9	432
64	LI:791042.1:2001JAN12	70249609V1	9	421
64	LI:791042.1:2001JAN12	2965648H1	9	269
64	LI:791042.1:2001JAN12	70248802V1	10	344
64	LI:791042.1:2001JAN12	70251537V1	9	419
64	LI:791042.1:2001JAN12	2965648F6	9	418
64	LI:791042.1:2001JAN12	70255545V1	9	160
64	LI:791042.1:2001JAN12	70249348V1	9	480

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
64	LI:791042.1:2001JAN12	70251568V1	10	131
64	LI:791042.1:2001JAN12	2990188H1	1	78
64	LI:791042.1:2001JAN12	70250412V1	18	344
64	LI:791042.1:2001JAN12	70250877V1	61	344
64	LI:791042.1:2001JAN12	70249729V1	96	622
64	LI:791042.1:2001JAN12	70250050V1	153	666
64	LI:791042.1:2001JAN12	70250613V1	164	598
64	LI:791042.1:2001JAN12	2965648T6	225	675
64	LI:791042.1:2001JAN12	70250417V1	244	726
64	LI:791042.1:2001JAN12	70258086V1	309	418
64	LI:791042.1:2001JAN12	70247657V1	434	723
64	LI:791042.1:2001JAN12	g3931798	506	646
64	LI:791042.1:2001JAN12	70250074V1	511	723
64	LI:791042.1:2001JAN12	70250730V1	548	739
64	LI:791042.1:2001JAN12	4970809F6	568	646
64	LI:791042.1:2001JAN12	4970809H1	568	646
64	LI:791042.1:2001JAN12	5318888H1	588	839
64	LI:791042.1:2001JAN12	5318869H1	588	846
64	LI:791042.1:2001JAN12	70247665V1	9	149
64	LI:791042.1:2001JAN12	70248080V1	29	308
64	LI:791042.1:2001JAN12	70250888V1	9	344
64	LI:791042.1:2001JAN12	70247287V1	12	344
64	LI:791042.1:2001JAN12	70250169V1	74	344
64	LI:791042.1:2001JAN12	70248792V1	9	148
64	LI:791042.1:2001JAN12	70251639V1	250	646
65	LI:1167140.1:2001JAN12	4609872H1	747	988
65	LI:1167140.1:2001JAN12	4609872T6	1017	1535
65	LI:1167140.1:2001JAN12	4609808T6	1160	1558
65	LI:1167140.1:2001JAN12	6268879T8	1172	1320
65	LI:1167140.1:2001JAN12	3706488H1	1343	1447
65	LI:1167140.1:2001JAN12	2840869F6	333	836
65	LI:1167140.1:2001JAN12	7674424J1	336	699
65	LI:1167140.1:2001JAN12	4609808F6	747	1113
65	LI:1167140.1:2001JAN12	4609872F6	747	1217
65	LI:1167140.1:2001JAN12	g2021436	821	1165
65	LI:1167140.1:2001JAN12	2840869T6	919	1390
65	LI:1167140.1:2001JAN12	4630562H1	750	1010
65	LI:1167140.1:2001JAN12	6268879H1	336	596
65	LI:1167140.1:2001JAN12	4609808H1	747	994
65	LI:1167140.1:2001JAN12	4721250F7	1	500
65	LI:1167140.1:2001JAN12	4721250H1	1	165
65	LI:1167140.1:2001JAN12	g2784213	36	159
65	LI:1167140.1:2001JAN12	g2779203	37	159
65	LI:1167140.1:2001JAN12	6268879F8	94	782
65	LI:1167140.1:2001JAN12	4381830H1	295	589
65	LI:1167140.1:2001JAN12	7583989H1	357	821
65	LI:1167140.1:2001JAN12	7674424H2	694	1258
65	LI:1167140.1:2001JAN12	g5152040	1118	1427
65	LI:1167140.1:2001JAN12	2914077H1	422	610

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
65	LI:1167140.1:2001JAN12	g2904807	1067	1427
65	LI:1167140.1:2001JAN12	2840869H1	336	599
66	LI:054831.1:2001JAN12	70944746V1	336	977
66	LI:054831.1:2001JAN12	71280792V1	498	955
66	LI:054831.1:2001JAN12	71281971V1	453	1051
66	LI:054831.1:2001JAN12	70943860V1	751	1300
66	LI:054831.1:2001JAN12	71280887V1	615	1175
66	LI:054831.1:2001JAN12	70944127V1	8	398
66	LI:054831.1:2001JAN12	71281860V1	940	1300
66	LI:054831.1:2001JAN12	70943758V1	470	1063
66	LI:054831.1:2001JAN12	71281967V1	342	793
66	LI:054831.1:2001JAN12	71282125V1	8	398
66	LI:054831.1:2001JAN12	71281066V1	877	1300
66	LI:054831.1:2001JAN12	70942580V1	638	1154
66	LI:054831.1:2001JAN12	70941535V1	1051	1300
66	LI:054831.1:2001JAN12	70943728V1	1029	1300
66	LI:054831.1:2001JAN12	70942169V1	1141	1755
66	LI:054831.1:2001JAN12	71281986V1	32	565
66	LI:054831.1:2001JAN12	70943347V1	8	566
66	LI:054831.1:2001JAN12	70944090V1	341	912
66	LI:054831.1:2001JAN12	70942940V1	1125	1784
66	LI:054831.1:2001JAN12	70942771V1	843	1300
66	LI:054831.1:2001JAN12	71281467V1	669	1300
66	LI:054831.1:2001JAN12	70941716V1	1	406
66	LI:054831.1:2001JAN12	70943818V1	7	398
66	LI:054831.1:2001JAN12	1577746H1	8	227
66	LI:054831.1:2001JAN12	1577746F6	8	250
66	LI:054831.1:2001JAN12	70943045V1	8	257
66	LI:054831.1:2001JAN12	70943548V1	160	755
66	LI:054831.1:2001JAN12	71281048V1	271	920
66	LI:054831.1:2001JAN12	70941133V1	254	907
66	LI:054831.1:2001JAN12	70944159V1	257	913
66	LI:054831.1:2001JAN12	71282425V1	323	959
66	LI:054831.1:2001JAN12	70941662V1	435	1058
66	LI:054831.1:2001JAN12	70943535V1	464	1025
66	LI:054831.1:2001JAN12	70944862V1	549	1172
66	LI:054831.1:2001JAN12	70943444V1	609	1282
66	LI:054831.1:2001JAN12	71282544V1	624	1161
66	LI:054831.1:2001JAN12	71282357V1	689	1326
66	LI:054831.1:2001JAN12	71281879V1	755	1311
66	LI:054831.1:2001JAN12	71031651V1	940	1154
66	LI:054831.1:2001JAN12	70944680V1	983	1300
66	LI:054831.1:2001JAN12	70943802V1	1057	1728
66	LI:054831.1:2001JAN12	70941544V1	1170	1773
66	LI:054831.1:2001JAN12	70941208V1	1207	1811
66	LI:054831.1:2001JAN12	70944835V1	1239	1790
66	LI:054831.1:2001JAN12	1577746T6	1643	1744
66	LI:054831.1:2001JAN12	g7703153	1643	1788
66	LI:054831.1:2001JAN12	70941278V1	1670	1951

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
66	LI:054831.1:2001JAN12	70941694V1	720	1245
66	LI:054831.1:2001JAN12	70942457V1	322	929
66	LI:054831.1:2001JAN12	70944789V1	8	561
66	LI:054831.1:2001JAN12	70944150V1	783	1300
66	LI:054831.1:2001JAN12	70942614V1	679	1072
66	LI:054831.1:2001JAN12	70941169V1	949	1300
66	LI:054831.1:2001JAN12	70942531V1	1033	1300
66	LI:054831.1:2001JAN12	70943671V1	949	1300
66	LI:054831.1:2001JAN12	70944285V1	1148	1756
66	LI:054831.1:2001JAN12	70942701V1	8	564
67	LI:1175083.1:2001JAN12	70229576V1	221	721
67	LI:1175083.1:2001JAN12	70230292V1	1	434
67	LI:1175083.1:2001JAN12	70234276V1	1	197
67	LI:1175083.1:2001JAN12	70229269V1	588	803
67	LI:1175083.1:2001JAN12	70229037V1	339	792
67	LI:1175083.1:2001JAN12	70230681V1	1	432
67	LI:1175083.1:2001JAN12	g4682831	379	843
67	LI:1175083.1:2001JAN12	70228423V1	412	864
67	LI:1175083.1:2001JAN12	g4684685	433	843
67	LI:1175083.1:2001JAN12	g1202200	447	846
67	LI:1175083.1:2001JAN12	g6568818	455	843
67	LI:1175083.1:2001JAN12	70232638V1	559	1065
67	LI:1175083.1:2001JAN12	2393170H1	51	291
67	LI:1175083.1:2001JAN12	70230756V1	359	833
67	LI:1175083.1:2001JAN12	g2717002	365	731
67	LI:1175083.1:2001JAN12	70232336V1	54	572
67	LI:1175083.1:2001JAN12	3932513H1	71	328
67	LI:1175083.1:2001JAN12	3696540H1	73	353
67	LI:1175083.1:2001JAN12	70232432V1	133	616
67	LI:1175083.1:2001JAN12	3085961H1	138	421
67	LI:1175083.1:2001JAN12	2190988H1	143	360
67	LI:1175083.1:2001JAN12	70232918V1	180	693
67	LI:1175083.1:2001JAN12	g2322443	276	559
67	LI:1175083.1:2001JAN12	70230724V1	359	837
67	LI:1175083.1:2001JAN12	g1240377	372	708
67	LI:1175083.1:2001JAN12	70233141V1	1	440
67	LI:1175083.1:2001JAN12	70228483V1	1	463
67	LI:1175083.1:2001JAN12	3274714F6	1	459
67	LI:1175083.1:2001JAN12	5863352H1	28	288
67	LI:1175083.1:2001JAN12	70228662V1	1	444
67	LI:1175083.1:2001JAN12	70224321V1	308	593
68	LI:2122897.2:2001JAN12	6597429H1	1027	1379
68	LI:2122897.2:2001JAN12	4062815T6	1027	1365
68	LI:2122897.2:2001JAN12	71745662V1	999	1377
68	LI:2122897.2:2001JAN12	2867016F6	1027	1361
68	LI:2122897.2:2001JAN12	3468525H1	1051	1305
68	LI:2122897.2:2001JAN12	4438637T8	1067	1287
68	LI:2122897.2:2001JAN12	5153965T9	962	1292
68	LI:2122897.2:2001JAN12	70926842V1	1133	1320

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
68	LI:2122897.2:2001JAN12	6205652F8	1141	1330
68	LI:2122897.2:2001JAN12	6840505F6	1004	1389
68	LI:2122897.2:2001JAN12	6597257H1	1027	1249
68	LI:2122897.2:2001JAN12	g6075478	972	1388
68	LI:2122897.2:2001JAN12	70925189V1	1237	1549
68	LI:2122897.2:2001JAN12	833806H1	1181	1442
68	LI:2122897.2:2001JAN12	g6075479	1065	1388
68	LI:2122897.2:2001JAN12	g6075480	1098	1388
68	LI:2122897.2:2001JAN12	g2162876	316	563
68	LI:2122897.2:2001JAN12	g1312222	1	559
68	LI:2122897.2:2001JAN12	70601491V1	1027	1120
68	LI:2122897.2:2001JAN12	70600306V1	650	1086
68	LI:2122897.2:2001JAN12	71744729V1	394	761
68	LI:2122897.2:2001JAN12	71747330V1	325	761
68	LI:2122897.2:2001JAN12	g314597	1112	1387
68	LI:2122897.2:2001JAN12	71746180V1	657	761
68	LI:2122897.2:2001JAN12	7123678H1	508	761
68	LI:2122897.2:2001JAN12	2060566T6	1027	1345
68	LI:2122897.2:2001JAN12	6335075F8	1093	1389
68	LI:2122897.2:2001JAN12	6335075F6	1082	1389
68	LI:2122897.2:2001JAN12	g1349341	990	1389
68	LI:2122897.2:2001JAN12	g2158912	1048	1389
68	LI:2122897.2:2001JAN12	1338987H1	1217	1389
68	LI:2122897.2:2001JAN12	6205652H1	1146	1389
68	LI:2122897.2:2001JAN12	6597357H1	1027	1388
68	LI:2122897.2:2001JAN12	6335075H1	1079	1389
68	LI:2122897.2:2001JAN12	4240910H1	623	761
68	LI:2122897.2:2001JAN12	71743319V1	399	761
68	LI:2122897.2:2001JAN12	7061305H1	531	761
68	LI:2122897.2:2001JAN12	71746935V1	305	761
68	LI:2122897.2:2001JAN12	2060566R6	508	761
68	LI:2122897.2:2001JAN12	4920522H1	653	761
68	LI:2122897.2:2001JAN12	70601467V1	508	761
68	LI:2122897.2:2001JAN12	4438637F8	508	766
68	LI:2122897.2:2001JAN12	4122257H1	674	761
68	LI:2122897.2:2001JAN12	g4269040	1035	1390
68	LI:2122897.2:2001JAN12	g3424416	1287	1389
68	LI:2122897.2:2001JAN12	8282552T1	902	1153
68	LI:2122897.2:2001JAN12	70602026V1	532	761
68	LI:2122897.2:2001JAN12	3690665F6	494	654
68	LI:2122897.2:2001JAN12	6583638H1	508	652
68	LI:2122897.2:2001JAN12	1653640H1	1105	1321
68	LI:2122897.2:2001JAN12	71741923V1	365	761
68	LI:2122897.2:2001JAN12	1551840H1	500	707
68	LI:2122897.2:2001JAN12	71738610V1	570	701
68	LI:2122897.2:2001JAN12	4438637H1	508	693
68	LI:2122897.2:2001JAN12	5351563H1	508	677
68	LI:2122897.2:2001JAN12	2060566H1	508	672
68	LI:2122897.2:2001JAN12	70599945V1	508	761

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
68	LI:2122897.2:2001JAN12	g2540873	1027	1391
68	LI:2122897.2:2001JAN12	g1422963	1173	1361
68	LI:2122897.2:2001JAN12	1422495H1	1027	1109
68	LI:2122897.2:2001JAN12	7061305F8	541	761
68	LI:2122897.2:2001JAN12	6597257F6	1027	1389
68	LI:2122897.2:2001JAN12	6597257F8	1027	1309
68	LI:2122897.2:2001JAN12	70601390V1	508	763
68	LI:2122897.2:2001JAN12	71746492V1	204	783
68	LI:2122897.2:2001JAN12	71743705V1	251	783
68	LI:2122897.2:2001JAN12	659903H1	1046	1323
68	LI:2122897.2:2001JAN12	g3050614	1263	1320
68	LI:2122897.2:2001JAN12	70602338V1	679	1112
68	LI:2122897.2:2001JAN12	71742394V1	210	927
68	LI:2122897.2:2001JAN12	71744775V1	201	821
68	LI:2122897.2:2001JAN12	3690665H1	494	795
68	LI:2122897.2:2001JAN12	7001467R8	202	794
68	LI:2122897.2:2001JAN12	7621750H1	237	772
68	LI:2122897.2:2001JAN12	71746378V1	282	786
68	LI:2122897.2:2001JAN12	6597429F8	1027	1402
68	LI:2122897.2:2001JAN12	71744345V1	723	1389
68	LI:2122897.2:2001JAN12	6840505H1	1006	1380
68	LI:2122897.2:2001JAN12	g2335604	958	1363
68	LI:2122897.2:2001JAN12	g892146	1046	1403
68	LI:2122897.2:2001JAN12	1841836H1	1170	1375
68	LI:2122897.2:2001JAN12	g5858210	1027	1390
68	LI:2122897.2:2001JAN12	70601310V1	499	761
68	LI:2122897.2:2001JAN12	2867016H1	1027	1166
68	LI:2122897.2:2001JAN12	2825806T6	1027	1346
68	LI:2122897.2:2001JAN12	70601290V1	1027	1252
68	LI:2122897.2:2001JAN12	1338987T6	1217	1281
68	LI:2122897.2:2001JAN12	2867016T6	1027	1275
68	LI:2122897.2:2001JAN12	6597429T8	1027	1285
68	LI:2122897.2:2001JAN12	6335075T8	1079	1285
68	LI:2122897.2:2001JAN12	3501989T6	1027	1275
68	LI:2122897.2:2001JAN12	g316924	1027	1246
68	LI:2122897.2:2001JAN12	7001467H1	937	1258
68	LI:2122897.2:2001JAN12	7001467F8	596	1258
68	LI:2122897.2:2001JAN12	2357307H1	1000	1240
68	LI:2122897.2:2001JAN12	4893845T8	1027	1216
68	LI:2122897.2:2001JAN12	70597232V1	707	1228
68	LI:2122897.2:2001JAN12	5970773T7	718	1204
68	LI:2122897.2:2001JAN12	70599974V1	508	761
68	LI:2122897.2:2001JAN12	70597746V1	508	761
68	LI:2122897.2:2001JAN12	g890921	984	1370
68	LI:2122897.2:2001JAN12	1997878T6	1133	1349
68	LI:2122897.2:2001JAN12	1919262H1	1077	1349
68	LI:2122897.2:2001JAN12	3690665T6	1027	1358
68	LI:2122897.2:2001JAN12	1225775T6	1027	1346
68	LI:2122897.2:2001JAN12	g3047646	1041	1351

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
68	LI:2122897.2:2001JAN12	70598341V1	508	761
68	LI:2122897.2:2001JAN12	g4649260	1027	1204
68	LI:2122897.2:2001JAN12	g5528625	983	1204
68	LI:2122897.2:2001JAN12	70598245V1	508	761
68	LI:2122897.2:2001JAN12	7354283H1	1027	1371
69	LI:2053195.3:2001JAN12	g5054453	29	286
69	LI:2053195.3:2001JAN12	g3147156	29	307
69	LI:2053195.3:2001JAN12	1308962H1	1	163
69	LI:2053195.3:2001JAN12	4742155H1	5	171
70	LI:439397.6:2001JAN12	7725467J1	444	1004
70	LI:439397.6:2001JAN12	417346H1	528	696
70	LI:439397.6:2001JAN12	5526237H2	751	1019
70	LI:439397.6:2001JAN12	71022920V1	777	1362
70	LI:439397.6:2001JAN12	70350975D1	804	1210
70	LI:439397.6:2001JAN12	7645980J1	1	608
70	LI:439397.6:2001JAN12	7725467H1	361	1004
71	LI:816379.6:2001JAN12	71862354V1	964	1396
71	LI:816379.6:2001JAN12	71862484V1	965	1396
71	LI:816379.6:2001JAN12	5755024H1	965	1396
71	LI:816379.6:2001JAN12	70514498D1	973	1396
71	LI:816379.6:2001JAN12	837155R1	999	1374
71	LI:816379.6:2001JAN12	70723496V1	1011	1396
71	LI:816379.6:2001JAN12	733063R1	1023	1396
71	LI:816379.6:2001JAN12	057744H1	1202	1392
71	LI:816379.6:2001JAN12	70510238D1	1215	1396
71	LI:816379.6:2001JAN12	70511221V1	1251	1375
71	LI:816379.6:2001JAN12	g4523810	1251	1396
71	LI:816379.6:2001JAN12	5353076H1	1251	1396
71	LI:816379.6:2001JAN12	621158H1	1252	1396
71	LI:816379.6:2001JAN12	621001H1	1252	1396
71	LI:816379.6:2001JAN12	2069960H1	1268	1396
71	LI:816379.6:2001JAN12	611497H1	1312	1396
71	LI:816379.6:2001JAN12	2318093H1	1548	1808
71	LI:816379.6:2001JAN12	2365110H1	1562	1788
71	LI:816379.6:2001JAN12	6541505H1	1563	2122
71	LI:816379.6:2001JAN12	2367584H1	1571	1799
71	LI:816379.6:2001JAN12	5262880H1	1617	1786
71	LI:816379.6:2001JAN12	2364628F6	1728	2154
71	LI:816379.6:2001JAN12	2364628H1	1728	1958
71	LI:816379.6:2001JAN12	2364628T6	1721	2204
71	LI:816379.6:2001JAN12	3562875H1	1762	2058
71	LI:816379.6:2001JAN12	640040H1	1154	1419
71	LI:816379.6:2001JAN12	5394221H1	1150	1405
71	LI:816379.6:2001JAN12	2869942H1	1155	1410
71	LI:816379.6:2001JAN12	2634306H1	1162	1412
71	LI:816379.6:2001JAN12	488003H1	1163	1417
71	LI:816379.6:2001JAN12	g2322646	1172	1608
71	LI:816379.6:2001JAN12	70923704V1	1184	1608
71	LI:816379.6:2001JAN12	2841649H1	1185	1422

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
71	LI:816379.6:2001JAN12	3034616H1	1188	1396
71	LI:816379.6:2001JAN12	g4175581	1188	1612
71	LI:816379.6:2001JAN12	4596909F6	1189	1375
71	LI:816379.6:2001JAN12	g2874255	1044	1393
71	LI:816379.6:2001JAN12	386476H1	1053	1330
71	LI:816379.6:2001JAN12	6514626H1	1074	1396
71	LI:816379.6:2001JAN12	70433255D1	1088	1396
71	LI:816379.6:2001JAN12	71275888V1	1120	1397
71	LI:816379.6:2001JAN12	71862635V1	950	1396
71	LI:816379.6:2001JAN12	70516131D1	958	1396
71	LI:816379.6:2001JAN12	71862788V1	961	1359
71	LI:816379.6:2001JAN12	2858353H1	1768	2033
71	LI:816379.6:2001JAN12	2961864H1	1772	2047
71	LI:816379.6:2001JAN12	5341535H1	1826	1934
71	LI:816379.6:2001JAN12	g1046751	729	1025
71	LI:816379.6:2001JAN12	71276608V1	771	1165
71	LI:816379.6:2001JAN12	71276635V1	777	1102
71	LI:816379.6:2001JAN12	70924007V1	789	1396
71	LI:816379.6:2001JAN12	71275891V1	794	1259
71	LI:816379.6:2001JAN12	70924234V1	794	1368
71	LI:816379.6:2001JAN12	71276231V1	802	1297
71	LI:816379.6:2001JAN12	5825651H1	817	1394
71	LI:816379.6:2001JAN12	70925679V1	828	1361
71	LI:816379.6:2001JAN12	70924744V1	840	1396
71	LI:816379.6:2001JAN12	70925722V1	843	1359
71	LI:816379.6:2001JAN12	70923524V1	852	1290
71	LI:816379.6:2001JAN12	70924039V1	866	1396
71	LI:816379.6:2001JAN12	7729811J1	879	1375
71	LI:816379.6:2001JAN12	71863033V1	875	1396
71	LI:816379.6:2001JAN12	71862558V1	886	1396
71	LI:816379.6:2001JAN12	71862587V1	922	1396
71	LI:816379.6:2001JAN12	70513587D1	930	1396
71	LI:816379.6:2001JAN12	70516118D1	936	1394
71	LI:816379.6:2001JAN12	8052754J1	1	624
71	LI:816379.6:2001JAN12	7764417J1	118	654
71	LI:816379.6:2001JAN12	7401916H1	190	685
71	LI:816379.6:2001JAN12	70923844V1	346	799
71	LI:816379.6:2001JAN12	70924180V1	346	933
71	LI:816379.6:2001JAN12	70924465V1	346	862
71	LI:816379.6:2001JAN12	70924539V1	346	895
71	LI:816379.6:2001JAN12	71276579V1	346	940
71	LI:816379.6:2001JAN12	70923858V1	346	896
71	LI:816379.6:2001JAN12	1260150F6	346	654
71	LI:816379.6:2001JAN12	1260150H1	346	590
71	LI:816379.6:2001JAN12	70923076V1	491	1036
71	LI:816379.6:2001JAN12	g712423	588	836
71	LI:816379.6:2001JAN12	g703559	588	849
71	LI:816379.6:2001JAN12	71276111V1	595	1199
71	LI:816379.6:2001JAN12	70924950V1	667	1097

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
71	LI:816379.6:2001JAN12	70925379V1	666	1226
71	LI:816379.6:2001JAN12	7964383H1	690	1267
71	LI:816379.6:2001JAN12	356585R6	724	1104
71	LI:816379.6:2001JAN12	2024316H1	1122	1406
71	LI:816379.6:2001JAN12	g3416935	1144	1396
71	LI:816379.6:2001JAN12	4157360H1	1147	1384
71	LI:816379.6:2001JAN12	4597309H1	1189	1435
71	LI:816379.6:2001JAN12	g1046650	1190	1396
71	LI:816379.6:2001JAN12	1493337H1	1192	1421
72	LI:2123452.4:2001JAN12	1456029T6	6	472
72	LI:2123452.4:2001JAN12	g5546101	191	470
72	LI:2123452.4:2001JAN12	1448389T6	58	469
72	LI:2123452.4:2001JAN12	g1067509	339	447
72	LI:2123452.4:2001JAN12	2928882H1	157	427
72	LI:2123452.4:2001JAN12	1456029F6	6	288
72	LI:2123452.4:2001JAN12	3448555H1	1	194
72	LI:2123452.4:2001JAN12	1456029H1	6	112
73	LI:474559.8:2001JAN12	71120072V1	1	647
74	LI:1089871.1:2001JAN12	70762020V1	1	125
74	LI:1089871.1:2001JAN12	70759980V1	1	704
74	LI:1089871.1:2001JAN12	70757962V1	1	481
74	LI:1089871.1:2001JAN12	2959305F6	1	471
74	LI:1089871.1:2001JAN12	70762245V1	1	554
74	LI:1089871.1:2001JAN12	g1972285	4	165
74	LI:1089871.1:2001JAN12	3887422H1	30	300
74	LI:1089871.1:2001JAN12	70761421V1	121	461
74	LI:1089871.1:2001JAN12	70758433V1	311	843
74	LI:1089871.1:2001JAN12	70757906V1	320	724
74	LI:1089871.1:2001JAN12	70763177V1	371	840
74	LI:1089871.1:2001JAN12	70762620V1	490	872
74	LI:1089871.1:2001JAN12	70761079V1	531	851
74	LI:1089871.1:2001JAN12	70762764V1	531	851
74	LI:1089871.1:2001JAN12	70759582V1	1236	1481
74	LI:1089871.1:2001JAN12	70759021V1	1285	1928
74	LI:1089871.1:2001JAN12	70758815V1	1294	1468
74	LI:1089871.1:2001JAN12	70757721V1	1302	1481
74	LI:1089871.1:2001JAN12	70767224V1	1310	1481
74	LI:1089871.1:2001JAN12	70761857V1	1314	1481
74	LI:1089871.1:2001JAN12	70764826V1	1381	1912
74	LI:1089871.1:2001JAN12	70758307V1	1409	1976
74	LI:1089871.1:2001JAN12	70760140V1	1774	2154
74	LI:1089871.1:2001JAN12	70761329V1	1779	2007
74	LI:1089871.1:2001JAN12	2959305T6	1821	2277
74	LI:1089871.1:2001JAN12	70760716V1	1843	2265
74	LI:1089871.1:2001JAN12	70762468V1	537	851
74	LI:1089871.1:2001JAN12	70758821V1	542	843
74	LI:1089871.1:2001JAN12	70761878V1	551	843
74	LI:1089871.1:2001JAN12	70762741V1	616	851
74	LI:1089871.1:2001JAN12	70757636V1	681	1265

TABLE 3

SEQ ID NO:	Template ID	Component ID	Start	Stop
74	LI:1089871.1:2001JAN12	70758209V1	685	851
74	LI:1089871.1:2001JAN12	70761553V1	685	851
74	LI:1089871.1:2001JAN12	70759811V1	685	1251
74	LI:1089871.1:2001JAN12	70761311V1	717	1320
74	LI:1089871.1:2001JAN12	70760042V1	759	1286
74	LI:1089871.1:2001JAN12	70760336V1	781	1320
74	LI:1089871.1:2001JAN12	70760101V1	1132	1481
74	LI:1089871.1:2001JAN12	70760117V1	1158	1484
74	LI:1089871.1:2001JAN12	70760813V1	1158	1315
74	LI:1089871.1:2001JAN12	70757952V1	1158	1374
74	LI:1089871.1:2001JAN12	70759158V1	1158	1394
74	LI:1089871.1:2001JAN12	70760818V1	1158	1394
74	LI:1089871.1:2001JAN12	70757680V1	1158	1467
74	LI:1089871.1:2001JAN12	70761293V1	1158	1458
74	LI:1089871.1:2001JAN12	70759646V1	1158	1609
74	LI:1089871.1:2001JAN12	70761118V1	1158	1458
74	LI:1089871.1:2001JAN12	70762739V1	1158	1481
74	LI:1089871.1:2001JAN12	70761840V1	1161	1477
74	LI:1089871.1:2001JAN12	70762279V1	1164	1481
74	LI:1089871.1:2001JAN12	70762802V1	1195	1481
75	LI:289608.1:2001JAN12	4786611H1	1	252
75	LI:289608.1:2001JAN12	5388881F8	111	661
75	LI:289608.1:2001JAN12	5388881H1	111	191
75	LI:289608.1:2001JAN12	5388881T8	113	630
75	LI:289608.1:2001JAN12	4786611F6	1	452

TABLE 4

SEQ ID NO:	Template ID	Tissue Distribution
1	LI:418914.1:2001JAN12	Sense Organs - 56%, Respiratory System - 24%
2	LI:246108.7:2001JAN12	Nervous System - 54%, Male Genitalia - 23%, Digestive System - 23%
3	LI:204262.2:2001JAN12	Unclassified/Mixed - 16%, Urinary Tract - 13%, Sense Organs - 12%
4	LI:331661.1:2001JAN12	Nervous System - 43%, Endocrine System - 29%, Hemic and Immune System - 21%
5	LI:335074.1:2001JAN12	Exocrine Glands - 86%
6	LI:154608.1:2001JAN12	Urinary Tract - 31%, Nervous System - 31%, Male Genitalia - 23%
7	LI:462889.1:2001JAN12	Embryonic Structures - 75%, Musculoskeletal System - 12%
8	LI:236680.2:2001JAN12	Unclassified/Mixed - 11%, CardiovascularSystem - 11%
9	LI:228186.1:2001JAN12	Sense Organs - 14%, Unclassified/Mixed - 11%
10	LI:721233.1:2001JAN12	Nervous System - 100%
11	LI:291759.2:2001JAN12	Digestive System - 17%, Urinary Tract - 13%, Connective Tissue - 12%
12	LI:292613.17:2001JAN12	Urinary Tract - 29%, Nervous System - 29%, Digestive System - 21%, Male Genitalia - 21%
13	LI:412959.15:2001JAN12	Embryonic Structures - 73%, Urinary Tract - 13%
14	LI:482512.3:2001JAN12	Sense Organs - 32%, Endocrine System - 10%
15	LI:413231.6:2001JAN12	Digestive System - 38%, Respiratory System - 23%, Nervous System - 23%
16	LI:203383.1:2001JAN12	Musculoskeletal System - 36%, Germ Cells - 25%, Connective Tissue - 18%
17	LI:133186.4:2001JAN12	Urinary Tract - 50%, Male Genitalia - 38%, Nervous System - 13%
18	LI:238576.2:2001JAN12	Urinary Tract - 12%, Respiratory System - 12%
19	LI:903914.3:2001JAN12	Unclassified/Mixed - 13%, Skin - 11%, Nervous System - 10%
20	LI:150817.1:2001JAN12	Nervous System - 100%
21	LI:219627.1:2001JAN12	Unclassified/Mixed - 62%, Urinary Tract - 15%, Male Genitalia - 12%
22	LI:197812.4:2001JAN12	Urinary Tract - 100%
23	LI:101525.1:2001JAN12	Cardiovascular System - 91%
24	LI:891123.1:2001JAN12	Musculoskeletal System - 73%, Male Genitalia - 27%
25	LI:813500.1:2001JAN12	Male Genitalia - 46%, Digestive System - 21%, Female Genitalia - 13%, Nervous System - 13%
26	LI:1037251.1:2001JAN12	Sense Organs - 42%, Hemic and Immune System - 13%, Endocrine System - 11%
27	LI:2032187.1:2001JAN12	Hemic and Immune System - 54%, Connective Tissue - 42%
28	LI:347572.1:2001JAN12	CardiovascularSystem - 32%, Digestive System - 28%, Cardiovascular System - 12%
29	LI:007788.1:2001JAN12	Hemic and Immune System - 67%, Nervous System - 33%
30	LI:336872.1:2001JAN12	Embryonic Structures - 40%, Female Genitalia - 27%, Male Genitalia - 17%
31	LI:1143291.1:2001JAN12	Skin - 19%, Urinary Tract - 14%, Stomatognathic System - 12%
32	LI:093477.1:2001JAN12	Unclassified/Mixed - 93%

TABLE 4

SEQ ID NO:	Template ID	Tissue Distribution
33	LI:222105.1:2001JAN12	CardiovascularSystem - 12%
34	LI:816737.2:2001JAN12	Female Genitalia - 29%, Hemic and Immune System - 15%, Urinary Tract - 13%
35	LI:475524.1:2001JAN12	Germ Cells - 47%, Liver - 17%
36	LI:383639.1:2001JAN12	Hemic and Immune System - 75%, Respiratory System - 10%
37	LI:814346.1:2001JAN12	Urinary Tract - 31%, Cardiovascular System - 12%, Hemic and Immune System - 11%
38	LI:898195.6:2001JAN12	Respiratory System - 18%, Embryonic Structures - 14%, Liver - 13%
39	LI:210497.2:2001JAN12	Hemic and Immune System - 100%
40	LI:110297.4:2001JAN12	Endocrine System - 20%, Unclassified/Mixed - 12%
41	LI:2051312.1:2001JAN12	Nervous System - 39%, Respiratory System - 18%, Cardiovascular System - 15%, Female Genitalia - 15%
42	LI:350272.2:2001JAN12	Exocrine Glands - 19%, Cardiovascular System - 12%, Musculoskeletal System - 11%
43	LI:1085472.4:2001JAN12	Urinary Tract - 28%, Stomatognathic System - 20%, Female Genitalia - 14%
44	LI:1190272.1:2001JAN12	Skin - 50%, Nervous System - 11%
45	LI:1086797.1:2001JAN12	Embryonic Structures - 27%, Stomatognathic System - 19%, Digestive System - 16%
46	LI:1144466.1:2001JAN12	Embryonic Structures - 25%, Connective Tissue - 18%, Nervous System - 15%
47	LI:1147914.1:2001JAN12	Connective Tissue - 30%, Musculoskeletal System - 27%, Female Genitalia - 17%
48	LI:758086.1:2001JAN12	Nervous System - 27%, Cardiovascular System - 24%, Female Genitalia - 14%, Hemic and Immune System - 14%, Exocrine Glands - 14%
49	LI:765245.5:2001JAN12	Pancreas - 18%, Exocrine Glands - 15%, Connective Tissue - 14%
50	LI:335608.2:2001JAN12	Stomatognathic System - 48%, Digestive System - 15%
51	LI:405795.1:2001JAN12	Embryonic Structures - 58%, Female Genitalia - 19%
52	LI:014872.1:2001JAN12	Connective Tissue - 80%
53	LI:239245.3:2001JAN12	Skin - 13%, Sense Organs - 13%, Respiratory System - 13%
54	LI:142384.5:2001JAN12	Stomatognathic System - 21%, Skin - 18%, Musculoskeletal System - 16%
55	LI:2068768.1:2001JAN12	Unclassified/Mixed - 100%
56	LI:2118074.1:2001JAN12	Endocrine System - 52%, Female Genitalia - 37%
57	LI:1189068.4:2001JAN12	Connective Tissue - 29%, Sense Organs - 26%
58	LI:2118704.1:2001JAN12	Sense Organs - 60%, Nervous System - 13%
59	LI:031700.2:2001JAN12	Female Genitalia - 64%, Urinary Tract - 27%
60	LI:2120122.1:2001JAN12	Unclassified/Mixed - 34%, Sense Organs - 23%, Germ Cells - 11%
61	LI:816174.1:2001JAN12	Digestive System - 22%, Male Genitalia - 22%, Exocrine Glands - 22%
62	LI:1189569.11:2001JAN12	Sense Organs - 92%

TABLE 4

SEQ ID NO:	Template ID	Tissue Distribution
63	LI:413584.1:2001JAN12	Unclassified/Mixed - 54%, Embryonic Structures - 11%
64	LI:791042.1:2001JAN12	Digestive System - 25%, Urinary Tract - 22%, Embryonic Structures - 20%
65	LI:1167140.1:2001JAN12	Embryonic Structures - 23%, Exocrine Glands - 19%, Nervous System - 12%, Respiratory System - 12%
66	LI:054831.1:2001JAN12	Digestive System - 60%, Hemic and Immune System - 40%
67	LI:1175083.1:2001JAN12	Germ Cells - 67%, Male Genitalia - 10%
68	LI:2122897.2:2001JAN12	CardiovascularSystem - 28%, Exocrine Glands - 18%, Cardiovascular System - 14%
69	LI:2053195.3:2001JAN12	Digestive System - 38%, Respiratory System - 38%, Hemic and Immune System - 25%
70	LI:439397.6:2001JAN12	Endocrine System - 33%, Exocrine Glands - 28%, Urinary Tract - 22%
71	LI:816379.6:2001JAN12	Hemic and Immune System - 29%, Urinary Tract - 17%, Endocrine System - 16%
72	LI:2123452.4:2001JAN12	Sense Organs - 71%, Embryonic Structures - 16%
74	LI:1089871.1:2001JAN12	Endocrine System - 55%, Female Genitalia - 27%, Hemic and Immune System - 18%
75	LI:289608.1:2001JAN12	Nervous System - 100%

TABLE 5

SEQ ID NO:	Frame	Length	Start	Stop	GI Number	Probability Score	Annotation
76	1	177	460	990	g16551610	1.00E-11	(AK056259) unnamed protein product
76	1	177	460	990	g9837385	4.00E-07	retinitis pigmentosa GTPase regulator-like protein
76	1	177	460	990	g16553150	1.00E-06	(AK057442) unnamed protein product
81	2	70	383	592	g12698182	2.00E-15	hypothetical protein
81	2	70	383	592	g7021164	8.00E-14	unnamed protein product
81	2	70	383	592	g16876883	1.00E-10	(BC016722) Unknown (protein for IMAGE:4075924)
82	2	239	2	718	g10437745	1.00E-120	unnamed protein product
82	2	239	2	718	g8926320	1.00E-115	corneal wound healing related protein
82	2	239	2	718	g12861811	1.00E-111	putative
83	2	114	362	703	g16751522	2.00E-35	(AB064543) dioxin inducible factor 3
83	2	114	362	703	g12002226	2.00E-32	C3HC4-type zinc finger protein
83	2	114	362	703	g10437296	2.00E-32	unnamed protein product
85	1	151	43	495	g15128221	1.00E-57	contains ESTs AU100786(C50379),C26898(C50379)~similar to Arabidopsis thaliana chromosome 1, F28N24.7~unknown protein
85	1	151	43	495	g9502415	6.00E-46	Unknown protein
85	1	151	43	495	g15529270	6.00E-46	At1g29250/F28N24_8
86	2	104	569	880	g7770147	6.00E-16	PRO1847
86	2	104	569	880	g10437752	2.00E-14	unnamed protein product
86	2	104	569	880	g6650810	3.00E-14	PRO1902
89	1	85	1486	1740	g12006213	5.00E-32	DC46
92	1	125	196	570	g13938315	8.00E-42	Unknown (protein for MGC:15634)
94	1	114	472	813	g12859423	2.00E-23	putative
94	1	114	472	813	g15919915	5.00E-23	putative
94	1	114	472	813	g1841551	5.00E-21	G16
95	2	110	1592	1921	g10438620	2.00E-24	unnamed protein product
95	2	110	1592	1921	g10437485	2.00E-23	unnamed protein product
95	2	110	1592	1921	g7020625	5.00E-23	unnamed protein product
96	2	100	1241	1540	g12698192	4.00E-19	hypothetical protein
96	2	100	1241	1540	g6690223	5.00E-13	PRO0470
96	2	100	1241	1540	g1389766	6.00E-11	unknown
99	2	60	1295	1474	g16303798	2.00E-09	(AF416714) unknown
99	2	60	1295	1474	g11493419	2.00E-09	PRO1367

TABLE 5

SEQ ID NO:	Frame	Length	Start	Stop	GI Number	Probability Score	Annotation
99	2	60	1295	1474	g6690223	2.00E-08	PRO0470
103	2	135	71	475	g14250579	5.00E-07	hypothetical protein PP1628
103	2	135	71	475	g10441903	5.00E-07	unknown
108	2	197	125	715	g434779	1.00E-20	KIAA0112
108	2	197	125	715	g15278392	1.00E-20	homolog of yeast ribosome biogenesis regulatory protein RRS1
108	2	197	125	715	g12804751	1.00E-20	Similar to regulator for ribosome resistance homolog (S. cerevisiae)
110	2	257	113	883	g14017947	1.00E-27	KIAA1865 protein
110	2	257	113	883	g10636484	1.00E-27	polyglutamine-containing protein
113	1	129	1	387	g2589160	2.00E-60	DCRA
113	1	129	1	387	g2588993	3.00E-55	Dcra
113	1	129	1	387	g13277666	3.00E-55	Down syndrome critical region gene a
116	3	59	240	416	g14598201	4.00E-24	human CLASP-5
116	3	59	240	416	g16550121	3.00E-15	(AK055401) unnamed protein product
116	3	59	240	416	g14597912	3.00E-15	human CLASP-3
118	1	172	1105	1620	g4678717	4.00E-60	hypothetical protein
118	1	172	1105	1620	g3947678	4.00E-60	dJ206D15.3
118	1	172	1105	1620	g12853820	3.00E-17	putative
119	3	214	3	644	g12845866	5.00E-10	putative
121	2	204	116	727	g6841564	9.00E-16	HSPC172
121	2	204	116	727	g6650543	9.00E-16	unknown
121	2	204	116	727	g5531839	9.00E-16	PTD009
122	1	284	1375	2226	g14388466	3.00E-96	hypothetical protein
122	1	284	1375	2226	g14133251	3.00E-96	KIAA1479 protein
122	1	284	1375	2226	g10434456	3.00E-96	unnamed protein product
124	3	81	549	791	g5726235	2.00E-13	unknown protein U5/2
125	2	129	425	811	g14189960	2.00E-28	PRO0764
125	2	129	425	811	g11493463	2.00E-22	PRO2852
125	2	129	425	811	g9280152	6.00E-22	unnamed portein product
126	3	142	3	428	g1526432	3.00E-09	neutral calponin
126	3	142	3	428	g4432964	4.00E-09	h2-calponin
126	3	142	3	428	g51144	5.00E-09	h2-calponin
131	3	206	3	620	g16198439	1.00E-17	hypothetical protein FLJ13855

TABLE 5

SEQ ID NO:	Frame	Length	Start	Stop	GI Number	Probability Score	Annotation
131	3	206	3	620	g15929470	1.00E-17	hypothetical protein FLJ13855
131	3	206	3	620	g10436290	1.00E-17	unnamed protein product
133	3	171	24	536	g14424725	8.00E-70	hypothetical protein FLJ13055
133	3	171	24	536	g10434892	8.00E-70	unnamed protein product
133	3	171	24	536	g12852801	9.00E-29	putative
135	1	186	460	1017	g13397124	7.00E-17	unnamed protein product
136	3	95	3	287	g5410527	3.00E-15	paracellin-1
138	1	73	55	273	g16549456	1.00E-07	(AK054840) unnamed protein product
138	1	73	55	273	g9437519	5.00E-07	MOST-1
138	1	73	55	273	g6690229	1.00E-06	PRO0483
140	1	103	148	456	g4809026	9.00E-37	suppressor of G2 allele of skp1 homolog
140	1	103	148	456	g15216168	9.00E-37	putative 40-6-3 protein
140	1	103	148	456	g12654187	9.00E-37	suppressor of G2 allele of SKP1, S. cerevisiae, homolog of
144	2	247	29	769	g14026730	8.00E-14	homoserine kinase
144	2	247	29	769	g7298468	5.00E-10	CG15164 gene product
144	2	247	29	769	g15075719	7.00E-09	PUTATIVE AMINOTRANSFERASE PROTEIN
145	2	79	1040	1276	g1911548	2.00E-27	cytochrome c-like polypeptide
147	2	208	155	778	g5106956	4.00E-97	FH1/FH2 domain-containing protein FHOS
147	2	208	155	778	g12697935	4.00E-61	KIAA1695 protein
147	2	208	155	778	g10438624	4.00E-61	unnamed protein product
149	3	73	246	464	g14189976	6.00E-27	PRO2972
149	3	73	246	464	g3415134	1.00E-14	Phyb1
149	3	73	246	464	g12857019	1.00E-14	putative
151	3	158	3	476	g7243081	6.00E-90	KIAA1350 protein
152	3	84	315	566	g288145	1.00E-05	put. ORF
152	3	84	315	566	g6690248	6.00E-05	PRO0657

TABLE 6

Program	Description	Reference	Parameter Threshold
ABI FACTURA	A program that removes vector sequences and masks ambiguous bases in nucleic acid sequences.	Applied Biosystems, Foster City, CA.	
ABI/PARACEL FDF	A Fast Data Finder useful in comparing and annotating amino acid or nucleic acid sequences.	Applied Biosystems, Foster City, CA; Paracel Inc., Pasadena, CA.	Mismatch <50%
ABI AutoAssembler	A program that assembles nucleic acid sequences.	Applied Biosystems, Foster City, CA.	
BLAST	A Basic Local Alignment Search Tool useful in sequence similarity search for amino acid and nucleic acid sequences. BLAST includes five functions: blastp, blastn, blastx, tblastn, and tblastx.	Altschul, S.F. et al. (1990) J. Mol. Biol. 215:403-410; Altschul, S.F. et al. (1997) Nucleic Acids Res. 25:3389-3402.	ESTs: Probability value= 1.0E-8 or less; Full Length sequences: Probability value= 1.0E-10 or less
FASTA	A Pearson and Lipman algorithm that searches for similarity between a query sequence and a group of sequences of the same type. FASTA comprises as least five functions: fasta, tfasta, fastx, tfastx, and ssearch.	Pearson, W.R. and D.J. Lipman (1988) Proc. Natl. Acad Sci. USA 85:2444-2448; Pearson, W.R. (1990) Methods Enzymol. 183:63-98; and Smith, T.F. and M.S. Waterman (1981) Adv. Appl. Math. 2:482-489.	ESTs: fasta E value=1.06E-6; Assembled ESTs: fasta Identity= 95% or greater and Match length=200 bases or greater; fastx E value=1.0E-8 or less; Full Length sequences: fastx score=100 or greater
BLIMPS	A BLocks IMProved Searcher that matches a sequence against those in BLOCKS, PRINTS, DOMO, PRODOM, and PFAM databases to search for gene families, sequence homology, and structural fingerprint regions.	Henikoff, S. and J.G. Henikoff (1991) Nucleic Acids Res. 19:6565-6572; Henikoff, J.G. and S. Henikoff (1996) Methods Enzymol. 266:88-105; and Attwood, T.K. et al. (1997) J. Chem. Inf. Comput. Sci. 37:417-424.	Probability value= 1.0E-3 or less
HMMER	An algorithm for searching a query sequence against hidden Markov model (HMM)-based databases of protein family consensus sequences, such as PFAM.	Krogh, A. et al. (1994) J. Mol. Biol. 235:1501-1531; Sonnhammer, E.L.L. et al. (1988) Nucleic Acids Res. 26:320-322; Durbin, R. et al. (1998) Our World View, in a Nutshell, Cambridge Univ. Press, pp. 1-350.	PFAM hits: Probability value= 1.0E-3 or less; Signal peptide hits: Score= 0 or greater
ProfileScan	An algorithm that searches for structural and sequence motifs in protein sequences that match sequence patterns defined in Prosite.	Gribskov, M. et al. (1988) CABIOS 4:61-66; Gribskov, M. et al. (1989) Methods Enzymol. 183:146-159; Bairoch, A. et al. (1997) Nucleic Acids Res. 25:217-221.	Normalized quality score≥GCG-specified "HIGH" value for that particular Prosite motif. Generally, score=1.4-2.1.
Phred	A base-calling algorithm that examines automated sequencer traces with high sensitivity and probability.	Ewing, B. et al. (1998) Genome Res. 8:175-185; Ewing, B. and P. Green (1998) Genome Res. 8:186-194.	

TABLE 6

Program	Description	Reference	Parameter Threshold
Phrap	A Phils Revised Assembly Program including SWAT and CrossMatch, programs based on efficient implementation of the Smith-Waterman algorithm, useful in searching sequence homology and assembling DNA sequences.	Smith, T.F. and M.S. Waterman (1981) Adv. Appl. Math. 2:482-489; Smith, T.F. and M.S. Waterman (1981) J. Mol. Biol. 147:195-197; and Green, P., University of Washington, Seattle, WA.	Score= 120 or greater; Match length= 56 or greater
Consed	A graphical tool for viewing and editing Phrap assemblies.	Gordon, D. et al. (1998) Genome Res. 8:195-202.	
SPScan	A weight matrix analysis program that scans protein sequences for the presence of secretory signal peptides.	Nielson, H. et al. (1997) Protein Engineering 10:1-6; Claverie, J.M. and S. Audic (1997) CABIOS 12:431-439.	Score=3.5 or greater
TMAP	A program that uses weight matrices to delineate transmembrane segments on protein sequences and determine orientation.	Persson, B. and P. Argos (1994) J. Mol. Biol. 237:182-192; Persson, B. and P. Argos (1996) Protein Sci. 5:363-371.	
TMHMMER	A program that uses a hidden Markov model (HMM) to delineate transmembrane segments on protein sequences and determine orientation.	Sonnhammer, E.L. et al. (1998) Proc. Sixth Intl. Conf. On Intelligent Systems for Mol. Biol., Glasgow et al., eds., The Am. Assoc. for Artificial Intelligence (AAAI) Press, Menlo Park, CA, and MIT Press, Cambridge, MA, pp. 175-182.	
Motifs	A program that searches amino acid sequences for patterns that matched those defined in Prosite.	Bairoch, A. et al. (1997) Nucleic Acids Res. 25:217-221; Wisconsin Package Program Manual, version 9, page M51-59, Genetics Computer Group, Madison, WI.	

CLAIMS

What is claimed is:

1. An isolated polynucleotide selected from the group consisting of:

a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of NO:1-75,

b) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of NO:1-75,

c) a polynucleotide complementary to the polynucleotide of a),

d) a polynucleotide complementary to the polynucleotide of b), and

e) an RNA equivalent of a)-d).

2. An isolated polynucleotide of claim 1, comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:1-75.

3. An isolated polynucleotide comprising at least 60 contiguous nucleotides of a polynucleotide of claim 1.

4. A composition for the detection of expression of secretory polynucleotides comprising at least one of the polynucleotides of claim 1 and a detectable label.

5. A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 1, the method comprising:

a) amplifying said target polynucleotide or fragment thereof using polymerase chain reaction amplification, and

b) detecting the presence or absence of said amplified target polynucleotide or fragment thereof, and, optionally, if present, the amount thereof.

6. A method for detecting a target polynucleotide in a sample, said target polynucleotide comprising a sequence of a polynucleotide of claim 1, the method comprising:

a) hybridizing the sample with a probe comprising at least 20 contiguous nucleotides comprising a sequence complementary to said target polynucleotide in the sample, and which probe specifically hybridizes to said target polynucleotide, under conditions whereby a hybridization complex is formed between said probe and said target polynucleotide or fragments thereof, and

b) detecting the presence or absence of said hybridization complex, and, optionally, if

present, the amount thereof.

7. A method of claim 5, wherein the probe comprises at least 30 contiguous nucleotides.

8. A method of claim 5, wherein the probe comprises at least 60 contiguous nucleotides.

9. A recombinant polynucleotide comprising a promoter sequence operably linked to a polynucleotide of claim 1.

10. A cell transformed with a recombinant polynucleotide of claim 9.

11. A transgenic organism comprising a recombinant polynucleotide of claim 9.

12. A method for producing a secretory polypeptide, the method comprising:

a) culturing a cell under conditions suitable for expression of the secretory polypeptide, wherein said cell is transformed with a recombinant polynucleotide of claim 9, and

b) recovering the secretory polypeptide so expressed.

13. A purified secretory polypeptide (SPTM) encoded by at least one of the polynucleotides of claim 2.

14. An isolated antibody which specifically binds to a secretory polypeptide of claim 13.

15. A method of identifying a test compound which specifically binds to the secretory polypeptide of claim 13, the method comprising the steps of:

a) providing a test compound;

b) combining the secretory polypeptide with the test compound for a sufficient time and under suitable conditions for binding; and

c) detecting binding of the secretory polypeptide to the test compound, thereby identifying the test compound which specifically binds the secretory polypeptide.

16. A microarray wherein at least one element of the microarray is a polynucleotide of claim 3.

17. A method for generating a transcript image of a sample which contains polynucleotides,

the method comprising the steps of:

a) labeling the polynucleotides of the sample,

b) contacting the elements of the microarray of claim 16 with the labeled polynucleotides of the sample under conditions suitable for the formation of a hybridization complex, and

c) quantifying the expression of the polynucleotides in the sample.

18. A method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a polynucleotide sequence of claim 1, the method comprising:

a) exposing a sample comprising the target polynucleotide to a compound, under conditions suitable for the expression of the target polynucleotide,

b) detecting altered expression of the target polynucleotide, and

c) comparing the expression of the target polynucleotide in the presence of varying amounts of the compound and in the absence of the compound.

19. A method for assessing toxicity of a test compound, said method comprising:

a) treating a biological sample containing nucleic acids with the test compound;

b) hybridizing the nucleic acids of the treated biological sample with a probe comprising at least 20 contiguous nucleotides of a polynucleotide of claim 1 under conditions whereby a specific hybridization complex is formed between said probe and a target polynucleotide in the biological sample, said target polynucleotide comprising a polynucleotide sequence of a polynucleotide of claim 1 or fragment thereof;

c) quantifying the amount of hybridization complex; and

d) comparing the amount of hybridization complex in the treated biological sample with the amount of hybridization complex in an untreated biological sample, wherein a difference in the amount of hybridization complex in the treated biological sample is indicative of toxicity of the test compound.

20. An array comprising different nucleotide molecules affixed in distinct physical locations on a solid substrate, wherein at least one of said nucleotide molecules comprises a first oligonucleotide or polynucleotide sequence specifically hybridizable with at least 30 contiguous nucleotides of a target polynucleotide, said target polynucleotide having a sequence of claim 1.

21. An array of claim 20, wherein said first oligonucleotide or polynucleotide sequence is completely complementary to at least 30 contiguous nucleotides of said target polynucleotide.

22. An array of claim 20, wherein said first oligonucleotide or polynucleotide sequence is completely complementary to at least 60 contiguous nucleotides of said target polynucleotide

23. An array of claim 20, which is a microarray.

24. An array of claim 20, further comprising said target polynucleotide hybridized to said first oligonucleotide or polynucleotide.

25. An array of claim 20, wherein a linker joins at least one of said nucleotide molecules to said solid substrate.

26. An array of claim 20, wherein each distinct physical location on the substrate contains multiple nucleotide molecules having the same sequence, and each distinct physical location on the substrate contains nucleotide molecules having a sequence which differs from the sequence of nucleotide molecules at another physical location on the substrate.

27. An isolated polypeptide selected from the group consisting of:

a) a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:76-152,

b) a naturally occurring polypeptide comprising an amino acid sequence at least 90% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:76-152,

c) a biologically active fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152, and

d) an immunogenic fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:76-152.

28. An isolated polypeptide of claim 27, comprising a polypeptide sequence selected from the group consisting of SEQ ID NO:76-152.

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<220>
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<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<210> 13
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<212> DNA
<213> Homo sapiens

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<223> Incyte ID No: LI:412959.15:2001JAN12

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<213> Homo sapiens

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<400> 14
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<211> 996
<212> DNA
<213> Homo sapiens

<220>
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<212> DNA
<213> Homo sapiens

<220>
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<210> 17
<211> 577
<212> DNA
<213> Homo sapiens

<220>
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<223> Incyte ID No: LI:133186.4:2001JAN12

<400> 17
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<212> DNA
<213> Homo sapiens

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<220>
<221> unsure
<222> 568, 1179
<223> a, t, c, g, or other

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<210> 19

<211> 7431
<212> DNA
<213> Homo sapiens

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<220>
<221> unsure
<222> 4454, 6865
<223> a, t, c, g, or other

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<213> Homo sapiens

<220>
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<223> Incyte ID No: LI:891123.1:2001JAN12

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<213> Homo sapiens

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<220>
<221> unsure
<222> 971
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<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<211> 3666
<212> DNA

<213> Homo sapiens

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<220>
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<222> 2065
<223> a, t, c, g, or other

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<211> 2094
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:007788.1:2001JAN12

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<210> 41
<211> 1627
<212> DNA
<213> Homo sapiens

<220>
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<220>
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<222> 1570
<223> a, t, c, g, or other

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<212> DNA
<213> Homo sapiens

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<210> 43
<211> 3597
<212> DNA
<213> Homo sapiens

<220>
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<223> Incyte ID No: LI:1085472.4:2001JAN12

<400> 43
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<210> 44
<211> 1090
<212> DNA
<213> Homo sapiens

<220>
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<223> Incyte ID No: LI:1190272.1:2001JAN12

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<210> 45
<211> 3608
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1086797.1:2001JAN12

<400> 45
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<210> 46
<211> 2170
<212> DNA
<213> Homo sapiens

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<221> misc_feature
<223> Incyte ID No: LI:1144466.1:2001JAN12

<220>
<221> unsure
<222> 719
<223> a, t, c, g, or other

<400> 46
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<211> 1394
<212> DNA
<213> Homo sapiens

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<221> unsure
<222> 484
<223> a, t, c, g, or other

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<213> Homo sapiens

<220>
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<210> 49
<211> 2299
<212> DNA
<213> Homo sapiens

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<223> Incyte ID No: LI:765245.5:2001JAN12

<220>
<221> unsure
<222> 1576, 1636, 1657, 1737
<223> a, t, c, g, or other

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<211> 1098
<212> DNA
<213> Homo sapiens

<220>
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<223> Incyte ID No: LI:335608.2:2001JAN12

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<210> 51

<211> 2238
<212> DNA
<213> Homo sapiens

<220>
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<223> Incyte ID No: LI:405795.1:2001JAN12

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<210> 52
<211> 1359
<212> DNA
<213> Homo sapiens

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<221> misc_feature
<223> Incyte ID No: LI:014872.1:2001JAN12

<220>
<221> unsure
<222> 144
<223> a, t, c, g, or other

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<211> 2633
<212> DNA
<213> Homo sapiens

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<211> 1966
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<212> DNA
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<220>
<221> unsure
<222> 2226
<223> a, t, c, g, or other

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<212> DNA
<213> Homo sapiens

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<221> unsure
<222> 172, 272-273
<223> a, t, c, g, or other

<400> 61
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ggagggaccg aggcaagttt cagagcaacg gtgaaagttt attacgcttt angctgggca 180
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gcaggcgaat cagttgagcc tgggaggcgg aggttgcagt gagccaagaa agtttattaa 420
gctttagaac agtaaggaaa ggaaagaaaa gaaggaaagt ataacttgga agagggccaa 480
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atgatcagtc tcaggtgttt tctattgcgg gggtgggggg cgggcggggg agctgcctgt 660
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taaccttgaa gtgaaaggcc tttctgcgtt tatcttacct tttttgagca gcattaaaac 1020

tgttttactc agacc 1035

<210> 62
<211> 915
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1189569.11:2001JAN12

<400> 62
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cttggagagg ctaggctctg cctgtggttc cccacagtca ggaactaacc agaaggcggg 180
agacttgaga ccttggcacc aggctgtcct acctccccag ccaggggatt cattacaatt 240
aaatgacagc tacttcccca cctccattat atacccaagc agtgctcaga ttaaatgggg 300
gactgggagg aaaaatagaa gccacttgat ctttgcgtgt gtgctgattt acagatcaaa 360
gaaggttaca ggaagttagg ctaacaccct tgttgcagca tttcccccaa atttcactaa 420
ccatgttcta tctgaatctt gaaatgtggt gagaggttcc ttccagttaa tcagaagata 480
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cccatggatg agtgcaccca ttcaagttgg gttagttggc ttctgtttgg tgtttgctac 600
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tgctttatga aattt 915

<210> 63
<211> 1337
<212> DNA
<213> Homo sapiens

<220>
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<223> Incyte ID No: LI:413584.1:2001JAN12

<220>
<221> unsure
<222> 681, 730, 1088
<223> a, t, c, g, or other

<400> 63
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ttttccagag cttctcggat gccctaatcg acgaggaccc ccaggcggac gttagaggag 180
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aactatgctg ctgccctaga caggttttat tcactgctga ctccccagtg cctagaacag 420
tgcctgggat gcagtaggta tttaataagt atttgctgat taataggtta tgcagatgag 480
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gtgccctcag tgctctgaga cagagctcac tgaccaggca tggctcccag ctgggggttc 960
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ccttacacaa atttggctgc caccatgaaa ccctcactgt tgctgccgcc gcgtggaaag 1320
gatgagcgcc tggtcac 1337

<210> 64
<211> 1463
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:791042.1:2001JAN12

<220>
<221> unsure
<222> 516
<223> a, t, c, g, or other

<400> 64
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aggctcttcg aaccaggacc agtgcggaac agcaagccat tggagagtcc tgagcagaga 120
aaggactgac ctgcctcatg ttttaaatct ggctgccgta ttggaagtag attggaggaa 180
aaaaaagtgg aagccctggg acccaccatc atgaacaatc ggggagaaga caagaggcca 240
gcaaaggaat gaacacaggg acgcatgaga catttggtgc cgaagacctg ggtcagcggg 300
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tcaggcctct gaacccaagc taagccatca tatcccctgt gacctgcatt tatacatcca 480
gatggcctga agcaaatgaa gatccacaaa agaagnaaaa atagccttaa ctgatgacat 540
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aatacatccc ttcattctat taggtctttc gtccttaccc tactttttgc aacagggctt 1260
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ccaaactgcc actcttaact ccc 1463

<210> 65
<211> 1558
<212> DNA

<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1167140.1:2001JAN12

<220>
<221> unsure
<222> 1474
<223> a, t, c, g, or other

<400> 65
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tcctagaaat gtgaagaatg tgacaaagtc tttaaatggt tgtcatactt gacttttttc 180
tttttttgag atgaagtctc actcttgtcc cccaggctgg tgtgcaatgg catgatgtcg 240
gctcactgca aactccgcct cccaggttca agtgattctc ctgcctcagc ctcccaagta 300
gctgggatta caggcatgag ccaccactcc ctgccttact tgattacatt caatataatt 360
catactggaa agaaatccta caagtgagag caatgtggca aaacttaacc accttattgc 420
acagaaaagc atttatgttt gagaaaaatt atacaaatac agactgtgaa aaagacatta 480
atatctgctt acatcttaac accagagagt tcatacttaa taaaagcaag ataagggcaa 540
ttactgtcaa aaggtctttc agaaaaatat aaccctttaa agtgaagaag agaatttata 600
ttgaagatgg acattacaaa cataaagagg gttgtagtac ctttacttga atcaaatttt 660
attgtacaca ttttgtacta gaggaaaact ctgaagcagt tgctcaagct ttgttcaaca 720
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aatatataag gaactgacac tgcagatata ctaagtcaag agttctgagt atagaaaata 960
atctaaaact aaagttgata gaaaaagtat ttgtatataa atttaagagg agtaaaagat 1020
tttttgcaga gtaataacta cattctaagt atactttatt tcttgaaaaa attacagact 1080
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gcatttatga tcttttctat ggacaagtaa ggacattaga atgtaagatg catgatgaaa 1260
aagtggagag gttctttgtg gttaacttat actcttgagt gatatatgag gtaggtgtta 1320
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agttaatggt ttcaacattt ttaacatgtt aatntcttgc cagtggcttt aaagtataga 1500
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<210> 66
<211> 1811
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:054831.1:2001JAN12

<400> 66
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catcaagtaa tgtaaggagc tatcaccatt tcaaatattc tactccactt tcccaataaa 180
tacatttatc ttcaccatta tctctatcat cattataacc agcaattact gcgcaattat 240
gccaggcact aagcatcatc tcagtaaatc ctcagaacaa tcttatgagt taggttctat 300
atcatgtcca tcttgcaggt gagaaatttg aatcttggaa tatttaaata tattgtataa 360
ggtcagaaga taataagaag tggcaactta gctgggtgca gcctcccaaa gtgctgggat 420

tacaggcatg agccaccggt ttccggccag agccatattc tttaatagct atctgaactg 480
gagccaggaa tcacatctca tgaaaaagga gaacattgag aaaatcatag cctaaatata 540
atatacagac ttcatacctc taattttagg aggctatcaa gcagtatcca aggcaaagtc 600
aagatggtca acatttttct caatatttag tgttgagccg attgcagtgt tcaggcaaat 660
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ttaattaatt cattcactta gtcagtatac agatgatgtg cttttagcat ctaagatctt 780
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<210> 67
<211> 1065
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1175083.1:2001JAN12

<400> 67
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gttagtggag tcagtgtttg ggttgaaagt ttccaaggtc cggccacttc ctagctatga 240
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<210> 68
<211> 1402

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:2122897.2:2001JAN12

<220>
<221> unsure
<222> 983
<223> a, t, c, g, or other

<400> 68
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accccatcaa tcttgcctat tccagaaaca aagtgaaatt aataatataa aattggtttg 120
atcaatttat gaattacatt gtcattgaaa gtaggagaac tagaccagga ggcactggtg 180
tgaccctgga gtagatggaa ctgtttgtgc atgtgtcttt cttaccttcc attctcataa 240
agaattagca cattccccac atacaccctg gccagactgt gtctttggga ctgcagcact 300
aaggtgtgtt tttgtttgtt aacttattcc cagtgcctgt gttgaccagg aggctttggg 360
aataaaggta cataaaggtc ttggagcctg gatgagcctg tggtcaagag atggcaggca 420
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<210> 69
<211> 307
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:2053195.3:2001JAN12

<400> 69
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cctccccacc cttgagaagg tactttgtaa tatgctcccc caccccttaag aaggtacttt 180
gtaatgttct ccccacccctt tgtactttgt aagatccacc ccctgcctgc aaaaaattgc 240
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ctgactg 307

<210> 70

<211> 1362
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:439397.6:2001JAN12

<400> 70
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accggggaga tgctgacagt acatgctagt atgaagagtc ccgctgacca gcaggcctga 180
ggacaccaca cacaatcgcc gcagcagagg catggtccag agcagcggct ttgagctgag 240
ctacctggag aaggtgtcag aggtgaagga cacggtgcgt cgacagtcac tgctacacca 300
tctctgctcc ctagtgctcc agacccggcc tgagtcctct gacctctatt cagaaatccc 360
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ctggccccag aactctgtgc ccaggagcca tgccttgagc agtattagcc gtgtgtgtat 1260
gcatgtgagt gtgtgtgtat gtgtgtgtgt gcatgcatat gccttgtgca tgtgtgtgag 1320
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<210> 71
<211> 2204
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:816379.6:2001JAN12

<400> 71
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tctggtagtt atattagata tgattacttc caaatttata ttgggatgga tatgttttta 180
tacatatatg aaatgtcaca tacataatgg tataaaaaca tatccatccc aatataaatt 240
tggaatcaga ctgtccagct gcctttctag ctttgggatt tggggtgcaa agcttatatt 300
tcccttgtat gagatgagaa taataaccct atttcgtagg ttatcctatt tcataaggat 360
taaatcttta aaatacatat gaagcagata ggatatttct ggtagttata ttagatatga 420
ttacttccaa atttatattg ggatggatat gtttttatac atatatgaaa tgtcacatac 480
ataatggtgt tttttcctgt ttaaaaatgt ttaattgtag aatacgtgaa aagcaaaagc 540
acaatgaaga aaatgtgaga gtatccataa tccctaactc agaaataacc actatatgac 600
tttgtagaaa cacatataga ggcatttaaa gacatcttat ttgatatcat actattggtt 660
gtttttaacc ttttaaaaaa ttactttgta atattgtcac tccaattcaa atattttcc 720
ccaactactt tgtgataaaa gcagttaaat ttcccaaagt aaataaaaac tccttgccta 780

tataaaaaca tgtgaaagct gaaagatagt gaacatttgg cttaaaatat taacaacttt 840
attgctttct ccccctattc ctagttgctg ggcatattgg attttaccca tcataggcgc 900
tgttctctta ggtttcctgt accgctacta cacatcggaa agcaaatcct cctgaggagg 960
ccttgctgaa gttagaaagt gcatccactt tggggcgaaa actagagact tgcttggggg 1020
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cgattggcca gacatcacct cagatctgag accagcgtct tccatctctc agagccttac 1140
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ggtttccatg agtaccctta tatttcacaa ctttctgttc ataagttata gtgacattgc 1260
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gagaccccta tctgtattaa aaaaaaatct gagtttaatt cgtgtttatt tatcataagg 1560
ggtttaattc ctgaagtaaa ggtttgcacc tattaaactt aaaactgcca aatgattttt 1620
gttcttttat gtgcgtgata aaaatacaaa gaatggtgtg gccacctcct ccctttcaag 1680
ctagggcagc aggtagctct tcccagcccc tgagcccagc cccttcccaa gtggtgccag 1740
acaaaaaact acatggccct ttcatgtctt gggggtggaa agggagggat gaattggggt 1800
gatagaaccc tggtgaattc agagtaatct ttctttagaa aactggtgtt ttctaaagaa 1860
acaggatagg agtttagaga aggcaccaaa gctttcactt tggtttggca ccagtttcta 1920
accatctgtt ttttctaccc tagctatctt ttattggtaa aatataaatg tataattatg 1980
tttgtagagc tttaccaagg agtttccctc ctttttttgtt tgttgattag caaatttttg 2040
attctccatt ttccaaaagt aagagactcc agcatggcct tctgtttgcc ccgcagtaaa 2100
gtaacttcca tataaaatgg tatttgaaag tgagagttca tgacaacaga ccgttttcca 2160
tttcatctgt attttatctc cgtgactcca acttgtgggt ttgt 2204

<210> 72
<211> 469
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:2123452.4:2001JAN12

<400> 72
gtccattctt taatactgtc tttccaaagt gtaagattcc ctaataggga gtcgctaaaa 60
tgtctatcta aatacagtct atcaagcaag aattctgtga ctgatttttt tggtaacagt 120
actttgattt gatacttgta tacaagttgg ttgaacatat tactctggtc agtttttaaa 180
ggctgactat ggttaatttg catattttag aagtacattt taggggtaat actagatcat 240
atagataaat attatcacca actaccatag ctaatattcc tttcctttct gcaggtcaat 300
ttttctgtgg aaataaatat tgtgataaaa aagaaggctt aaagagttgg gaagttaatt 360
ttggttatat tgagcatggt gagaagagaa atgcacttgt taaattaagg ttatgccaag 420
aatgttccat taaattaaat ttccatcggc aggagaaaag aatgatgtc 469

<210> 73
<211> 647
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:474559.8:2001JAN12

<400> 73
aaagacacaa tcaatacaga cgggcaagtg ctgagtcgaa cataacatca gtccctagca 60
attcaagaaa caccagtgac tgcgttttaa aattcagcag actcccttga atatggtact 120

taaaaaaaaa aaaaaaaagg gctcattcta cccgtggagc ctactgaaaa attattgttt 180
ctgaggggtt gagaaacaaa agggaagaga gctacgggca ttgaactacg tttggagagt 240
gacttgatgc aaagaacacc aacattttca tttacccatg ggaccaatta aacaggcgat 300
ttcaaacctc tttgcaacaa caaattttct ttattaacaa ttttcttcac ggttaaaatt 360
tttagcgcct taaaaggcct attaggcttc ctaattttta ctaaacagcg ggcaactctt 420
tggacaaggg actcggcgcc tcagaaaatt ttccaacgcg gttaccacaa cgagattttc 480
caacgcgtaa ggacgcgcct caaaaaccgg cttctttagg gggcgatttt ttggcacccct 540
gggctttggc tcggggaccc tacgaattta aggtcttctt tatttggcat tacgcggaac 600
acttgcgggg cccacgttta acttggcgcg ttaattactg gcgactt 647

<210> 74
<211> 2282
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1089871.1:2001JAN12

<400> 74
gggatagagg aaacagctgt gatagcagca gtaaaagccg gaaccgaggt tggaaaccta 60
tgagagaaac attaaatgtt gatagtattt ttagtgaaag tgaaaaaaga cagcatagtc 120
caagacataa accaaatatc agtaataagc ctaaatctag caaggatccg agttttagta 180
attggccaaa agagaatcca aagcaaaaag gtttaatgac catatatgaa gatgaaatga 240
agcaggaaat aggaagcaga agttcccttg aatctaatgg aaaaggagca gagaaaaata 300
aaggccttgt agagggtaaa gtgcatggtg ataattggca gatgcaaagg actgagtctg 360
gatatgaaag cagtgatcac atcagtaatg gttctactaa tttggactca cctgttatcg 420
atggaaatgg tacagtaatg gatatcagtg gtgttaaaga aacagtgtgc ttcaggtaat 480
gtaaaagttg agtgaatcat ttttccatca ctcttctttt ttgttaattg catgaagtaa 540
tttttgaagt ttggggtcaa ttaaatagaa cagaaacagc atgagctgtt ttaaagagct 600
ttaaaaagtt tgtttctttt aaacacaagt atgtttctgt aaagaaacct aggatattgt 660
agtttatttg atattttaga tttccatttt gaatagttat ttcctgattc caaaaatagc 720
agctttttat ttttagaaaa tttggaaagt acagaagttt attatcattg ttgtgtcact 780
gtcaacaatt gattggtttt aaagcacaga cttcaattgg tatcatctaa gtcattaagg 840
tggttgttta attcttcttt ttttggtggg aggggaagga gtctcactct gttgcccagg 900
ctggagtgca gtggcgcaat tacgggtcac tgcaacctcc gcctcccagg ttcaagcgat 960
tctcctgcct taacttccca agtagctggg actacagaca cgcaccacca cgcctggcta 1020
atttttgtat ttttagagac ggggtttccc caggctactc ttgaactccc aacctcaggt 1080
gatccacctg ccttggcctc ccaaagtgct gggattacag gcctgagcca ctatgcccag 1140
gctgttgttt aattcttcaa tctatataat gtttataatc ccatctctaa catttgtaac 1200
tcagaactga agctagtttt tactgtcaca ctcattctca tggaagagat attttccctt 1260
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attatattac tgtttaatcc ttctaacaat gtgtttgttt gatattagct gatatttgac 1380
cacatttgtt attaaaaggt agatttgcaa aaatcaactg ctcatgtttt atgaaaatgc 1440
ttgtttcaat aaagacttaa ggaaagggcc aggtgtagtg tttacacacc tgtaatcaca 1500
gcacccttggg aggctgaggc aggaggattg cttgagccca ggagttcaat actagcctga 1560
gcaacatgga aagatctcat catctctagg aaacagtttt aaaatattag ccaggtattg 1620
tggcatatgc ctgtggtccc agctacttgg gaggctgagg tgggaggatt tttgagccca 1680
ggaggtcgag gctgcagtga accatgtttg taccactgca ctccatcctg ggcaaaagag 1740
caaaggtcct ggctcaaaaa aaaaaaaaag atttgacatg gaaagggtaa ttttataatt 1800
cttcttggaa tggagtagcc tagggtagta gaaagatcag gactttataa ccagatagac 1860
ttagatttta attattgggc aaattaattt gacttttaca gtctttatct tctgtaaaat 1920
gaagataaca actactttta agtattaaat aatgtacatt aagccctaga acagcacatg 1980
gcatataata aatgtttaac aaatgttgtt ttttttaga ctaaacaaag gcagtccata 2040
atacctgatg tgtttagtgt gtattttatt ttctagtgac cagattacga caagcaacct 2100
aaataaagaa cgtggggact gtacctccct tcagagccaa catcacttag aaggtaaaaa 2160

acttatttga atataatagt tgctgtaaaa aatgaattat agtaatttat ggtttgctat 2220
tatgtatctg agagaaaatc ctatatgact ataaaaatta tttttaaata accctaaaac 2280
tt 2282

<210> 75
<211> 661
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:289608.1:2001JAN12

<220>
<221> unsure
<222> 38, 40, 69
<223> a, t, c, g, or other

<400> 75
tgcaatgtta cttataatag tggacacctt ttagccanan gaccaaactt agcatcccta 60
acaattgana agaaactgac gttgtgtgct tcctgatgtg atgtgatact ggtagtagtt 120
cctaaatact ggaagacata taaaagtcta aagaaaataa aaactgctca tcatccaacc 180
tgctagaaat aatcacctga ggtcaggagt ttgagatcag cttgggcaac atggtgaaac 240
ctcgtctcta ctaaaaatac aaaaattagc tgggtgtggt ggcacatgcc tgtaatccca 300
gctactcggg aggctgaggc acaagaattt tgaactcggg aggtggaggt tgcagtgagc 360
cgagatcaca tcactgcact ccagcctggg tgacagagac tctgtctcaa aaacaaacaa 420
aaactgggat gactgataca atatgtacgt atctatatct ctatataaat atatataagg 480
aatcatatgc acatatgcat gatacgtgta tatacatgat acatagatgt catacatggt 540
tatatagcaa tggatatcca tggtatgcat gatacctgaa gtatatactt ttacctatga 600
gtatatgagc agtttttcat gtcatgaaat gttttaaaat gtgtttaact gcataataat 660
t 661

<210> 76
<211> 177
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:418914.1.orf1:2001JAN12

<400> 76
Ser Phe Lys Ile Pro Leu Leu Phe Phe Asn Phe Arg Lys Ser Glu
1 5 10 15
Lys Glu Arg Met Arg Glu Tyr Gln Arg Glu Leu Glu Glu Arg Glu
20 25 30
Glu Lys Leu Lys Lys Arg Pro Leu Leu Phe Glu Arg Val Ala Gln
35 40 45
Lys Asn Ala Arg Met Ala Ala Glu Lys His Tyr Ser Asn Thr Leu
50 55 60
Lys Ala Leu Gly Ile Ser Asp Glu Phe Val Ser Lys Lys Gly Gln
65 70 75
Ser Gly Lys Val Leu Glu Tyr Phe Asn Asn Gln Glu Thr Lys Ser
80 85 90
Val Thr Glu Asp Lys Glu Ser Phe Asn Glu Glu Glu Lys Ile Glu
95 100 105

```
Glu Arg Glu Asn Gly Glu Glu Asn Tyr Phe Ile Asp Thr Asn Ser
                110                 115                 120
Gln Asp Ser Tyr Lys Glu Lys Asp Glu Ala Asn Glu Glu Ser Glu
                125                 130                 135
Glu Glu Lys Ser Val Glu Glu Ser His Leu Asn His Gln Gly Leu
                140                 145                 150
Leu Ser Met Pro Leu Leu Leu Phe Ala Ala Ser Gly Cys Gln Gln
                155                 160                 165
Pro His Leu Cys Leu Glu His Leu Trp Gly Arg Phe
                170                 175
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<210> 77
<211> 45
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:246108.7.orf3:2001JAN12

<400> 77

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Arg Gln Leu Leu Leu Lys Ile Leu Cys Met Val Asp Ile Glu Leu
  1               5                  10                  15
Met Thr Tyr Ser Asn Lys Leu Glu Ile Gly Phe Gln Ser Glu Phe
                 20                  25                  30
Gly Cys Phe Trp His Val Arg Val Glu Lys Gln Leu Ala Glu Val
                 35                  40                  45
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<210> 78
<211> 124
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:204262.2.orf1:2001JAN12

<400> 78

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Ile Asn Thr Ile Ile Phe Ile Trp Lys Phe Tyr Arg Arg Ala Ile
  1               5                  10                  15
Ser Val Tyr Val Ile Thr Pro Asp Phe Leu Lys Leu Leu Leu Val
                 20                  25                  30
Asp Asn Arg Gln Val Leu Ser Ser Val Pro Leu Arg Val Val Pro
                 35                  40                  45
Gly Leu Pro Ala Val Glu Leu Thr Gly Gly Ile Leu Gln Phe Cys
                 50                  55                  60
Asp Pro Arg Met Arg Pro Arg Arg Ser Val Arg Ser Ala Gly Gly
                 65                  70                  75
Gly Ala Trp Glu Ala Val Phe Val Met Asn Ser Gly Val Phe Cys
                 80                  85                  90
Pro Leu Lys Cys Ile Phe Val His Pro Ile Arg Leu Lys Glu Arg
                 95                 100                 105
Lys Ser Ile Ser Asn Glu Cys Lys Leu Phe Leu Arg Lys Lys Cys
                110                 115                 120
Ile Arg Leu Leu
```

<210> 79
<211> 168
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:331661.1.orf1:2001JAN12

<400> 79
Leu Gly Lys Glu Arg Gly Gly Arg Thr Gly Thr Glu Lys Gln Arg
1 5 10 15
Glu Glu Glu Arg Ser Arg Glu Thr Gly Gln Arg Trp Arg Glu Met
20 25 30
Arg Asp Gln Leu Arg Gly Cys Pro Arg Ala Trp Gly Gly Gly Gly
35 40 45
Glu Met Asp Glu Lys Ala Glu Lys Gly Leu Gly Ser Gly Glu Glu
50 55 60
Val Asn Gly Asp Val Gly Trp Gly Gln Glu Trp Asp Ala Glu Glu
65 70 75
Gly Glu Glu Asp Glu Gly Ala Arg Met Arg Gly Ser Gly Glu Gly
80 85 90
Val Ala Ile Trp Ala Leu Gly Glu Gly Arg Ala Cys Ser Pro Lys
95 100 105
Asp Ala Cys His Gln Val Ser Leu Pro His Leu Val Pro Gln Gly
110 115 120
His Pro Pro Asn Leu Cys Pro Gly Ala Gly Asp Arg Thr Asp Leu
125 130 135
Ser Glu Ala Gly Gly Pro Gly His Arg Gln Pro Arg Pro His Pro
140 145 150
Phe Gly Lys Asn Trp Ser Glu Gly Ser His Phe Arg Gly Arg Ser
155 160 165
Gly Ser Ser

<210> 80
<211> 63
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:335074.1.orf1:2001JAN12

<400> 80
Gln Ser Lys Thr Leu Ser Leu Lys Asn Glu Lys Asn Ser Ala Gly
1 5 10 15
Tyr Ser Val Asp Ile Ser Lys Leu Ile Val Met Phe Ile Arg Arg
20 25 30
Gly Lys Arg Pro Arg Ile Val Asn Ser Ile Leu Lys Glu Lys Ser
35 40 45
Lys Val Gly Gly Pro Ile Val Pro Asn Phe Ser Thr Phe Thr Ile
50 55 60
Lys Pro Gln

<210> 81
<211> 70
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:154608.1.orf2:2001JAN12

<220>
<221> unsure
<222> 37
<223> unknown or other

<400> 81
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Glu Met Asn Leu Phe Tyr Leu Phe Ile Glu Met Arg Ser Cys Ser
  1               5                  10                  15
Val Asn Gln Ala Gly Val Leu Trp His His Leu Ser Ser Leu Gln
                 20                  25                  30
Pro Arg Ile Pro Gly Leu Xaa Gln Ser Ser Cys Leu Asp Leu Pro
                 35                  40                  45
Ser Ser Trp Asp Tyr Arg Cys Glu Pro Pro Cys Leu Thr Gln Lys
                 50                  55                  60
Leu Ile Tyr Phe Leu Ser Val Phe Lys Phe
                 65                  70
```

<210> 82
<211> 239
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:462889.1.orf2:2001JAN12

<400> 82
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Ala Ala Ala Glu Ala Ala Ser Leu Phe Pro Trp Ser Gly Gln Cys
  1               5                  10                  15
Val Ala Ala Arg Val Thr Thr Gly Glu Val Gly Ile Met Val Met
                 20                  25                  30
Lys Ala Ser Val Asp Asp Asp Asp Ser Gly Trp Glu Leu Ser Met
                 35                  40                  45
Pro Glu Lys Met Glu Lys Ser Asn Thr Asn Trp Val Asp Ile Thr
                 50                  55                  60
Gln Asp Phe Glu Glu Ala Cys Arg Glu Leu Lys Leu Gly Glu Leu
                 65                  70                  75
Leu His Asp Lys Leu Phe Gly Leu Phe Glu Ala Met Ser Ala Ile
                 80                  85                  90
Glu Met Met Asp Pro Lys Met Asp Ala Gly Met Ile Gly Asn Gln
                 95                 100                 105
Val Asn Arg Lys Val Leu Asn Phe Glu Gln Ala Ile Lys Asp Gly
                110                 115                 120
Thr Ile Lys Ile Lys Asp Leu Thr Leu Pro Glu Leu Ile Gly Ile
                125                 130                 135
```

Met Asp Thr Cys Phe Cys Cys Leu Ile Thr Trp Leu Glu Gly His
140 145 150
Ser Leu Ala Gln Thr Val Phe Thr Cys Leu Tyr Ile His Asn Pro
155 160 165
Asp Phe Ile Glu Asp Pro Ala Met Lys Ala Phe Ala Leu Gly Ile
170 175 180
Leu Lys Ile Cys Asp Ile Ala Arg Glu Lys Val Asn Lys Ala Ala
185 190 195
Val Phe Glu Glu Glu Asp Phe Gln Ser Met Thr Tyr Gly Phe Lys
200 205 210
Met Ala Asn Ser Val Thr Asp Leu Arg Val Thr Gly Met Leu Lys
215 220 225
Asp Val Gly Asp Asp Met Gln Arg Arg Val Lys Ser Thr Arg
230 235

<210> 83
<211> 114
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:236680.2.orf2:2001JAN12

<400> 83
Ser Ser Glu His Thr Ile Ser Leu Leu Gly Glu Leu Asp Cys Ser
1 5 10 15
Lys Asp Thr Gly Ala Thr Val Leu His Phe Met Lys Ala Cys Gly
20 25 30
Ala Val His Met Asn Asp Thr Tyr Met Phe Ala Cys Glu Thr Asp
35 40 45
Phe Ile Ala His Ser Phe Leu Gly Arg Ala Glu Pro Glu Phe Ala
50 55 60
Gly Gly Tyr Glu Arg Arg Glu Arg His Ala Lys Thr Ile Asp Ile
65 70 75
Ala Gln Glu Glu Val Leu Thr Cys Leu Gly Ile His Leu Tyr Glu
80 85 90
Arg Leu His Arg Ile Trp Gln Lys Leu Arg Ala Glu Glu Gln Thr
95 100 105
Trp Gln Asp Ala Phe Leu Ser Trp Cys
110

<210> 84
<211> 233
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:228186.1.orf2:2001JAN12

<400> 84
Ser Phe Glu Thr Val Glu Arg Val Lys Arg Glu Arg Asn Trp Ala
1 5 10 15
Arg Leu Ala Ala Gly Glu Gly Gly Gly Gly Gly Gly Gly Phe Pro
20 25 30

```
Asp Phe Met Pro Val Ala Ser Ala Cys Arg Ile Phe Val Met His
                35                  40                  45
Phe Lys Val Asp Ile Met Ala Pro Leu Cys Ser Glu Ser Gln Ser
                50                  55                  60
Ser Leu Arg His Cys Tyr Lys Arg Thr Leu Arg Lys Ile Trp Pro
                65                  70                  75
Tyr Glu Pro Ser Gln Pro Gln Ala Lys Arg Met Thr Met Cys Val
                80                  85                  90
Ser Ala Ala His Gly Gln Phe Val Ser His Cys Phe Gly Lys Pro
                95                  100                 105
Cys Val Pro Asn Gln Gly Arg Val Phe Gln Gly Lys Val Asn Phe
                110                 115                 120
Pro Lys Phe Ile Lys Ile Glu Leu Gly Lys Pro Ser Ile Leu Asn
                125                 130                 135
Leu Phe Gln Ser Ser Gly His His Ser Tyr Phe Phe Cys His Val
                140                 145                 150
Lys Glu Lys Phe Gln Ala Val His Ser Val His Ala Lys Asn Asn
                155                 160                 165
Gln Pro Ile Leu Leu Gly Asp Leu Leu Leu Asn Val Pro Glu Pro
                170                 175                 180
Ala Asn Val Lys Met Met Val Ser Glu Phe Ala Leu Met Val Ser
                185                 190                 195
Glu Ser Gln Lys Glu Cys Asp Leu Tyr Trp Lys Pro Leu Phe Lys
                200                 205                 210
Phe Asn Asn Ser Glu Met Leu His Thr Ser Ala Ser Phe Leu Ile
                215                 220                 225
Met Phe Thr Val Ile Leu Met Thr
                230

<210> 85
<211> 151
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:721233.1.orf1:2001JAN12

<400> 85
Asn Asn Tyr Arg Pro Trp Met Glu Glu Glu Ile Thr Glu Gly Leu
  1             5                   10                  15
Lys Asn Leu Thr Val Thr Gly Asp Ala Ala Ala Ser Gly Gly Glu
                20                  25                  30
Gly Gln Arg Arg Gly Gly Gly Ile Ser Ser Asn Arg Ile Gln Val
                35                  40                  45
Ser Asn Thr Lys Lys Pro Leu Phe Phe Tyr Val Asn Leu Ala Lys
                50                  55                  60
Arg Tyr Met Gln Gln His Gly Asp Val Glu Leu Ser Ala Leu Gly
                65                  70                  75
Met Ala Ile Ala Thr Val Val Thr Val Ala Glu Ile Leu Lys Asn
                80                  85                  90
Asn Gly Phe Ala Val Glu Lys Lys Ile Arg Thr Ser Thr Val Asp
                95                  100                 105
Ile Asn Asp Glu Ser Arg Gly Arg Pro Phe Gln Lys Ala Lys Ile
                110                 115                 120
Glu Ile Ile Leu Gly Lys Ser Asp Arg Phe Asp Glu Leu Met Ala
```

```
                125                 130                 135
Ala Ala Ala Glu Glu Arg Gly Glu Val Glu Glu Gly Glu Glu Gln
                140                 145                 150
Ala


<210> 86
<211> 104
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:291759.2.orf2:2001JAN12

<400> 86
Thr Ile Glu Val Phe Ile Tyr Phe Val Ile Pro Ile Ile Ile Val
  1               5                  10                  15
Met Glu Leu Trp Glu Gly Phe Gly Phe Ser Val Leu Ile Asn Met
                 20                  25                  30
Val Tyr Phe Leu Arg Trp Ser Phe Ala Leu Val Ala Glu Ala Gly
                 35                  40                  45
Val Lys Trp His Gly Leu Gly Ser Leu Gln Pro Pro Ser Leu Arg
                 50                  55                  60
Phe Lys Gln Phe Ser Cys Leu Ser Leu Pro Lys Cys Trp Asp Tyr
                 65                  70                  75
Arg Leu Glu Pro Leu Leu Pro Ala Asp Phe Cys Ile Ser Gly Asp
                 80                  85                  90
Asp Arg Val Ser Pro Cys Trp Pro Gly Leu Val Ser Asn Ser
                 95                 100

<210> 87
<211> 34
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:292613.17.orf1:2001JAN12

<220>
<221> unsure
<222> 29
<223> unknown or other

<400> 87
Pro Thr Gly Ile Ser Lys Thr Glu Lys Lys Val Lys Leu Glu Asp
  1               5                  10                  15
Lys Ser Ser Thr Ala Phe Gly Lys Arg Lys Glu Lys Asp Xaa Glu
                 20                  25                  30
Arg Arg Glu Lys


<210> 88
<211> 70
<212> PRT
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<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:412959.15.orf3:2001JAN12

<400> 88
Tyr Ser Phe Tyr Gly Leu Val Val Val Glu Asp Ser Ala Asp Asn
1 5 10 15
Tyr Ser Val Arg Tyr Asn Thr Val Leu Ile Ala Leu Gly Val Leu
20 25 30
Lys Glu Asn Gln Ile Tyr Phe Trp Phe Pro Asp Asn Ile Ser Lys
35 40 45
Glu Asn Cys Val Phe Arg Ser Ser Leu Asp Trp His Ser Leu Trp
50 55 60
Cys Phe Leu Ser Gln Phe Phe Gly Phe Tyr
65 70

<210> 89
<211> 85
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:482512.3.orf1:2001JAN12

<400> 89
Val Cys Gln His Asn Arg His Gly Arg Phe Arg Gly Leu Ser Thr
1 5 10 15
Gln Arg His Arg Lys Asn Gly Leu Ala Lys Asn Leu Asp Val Phe
20 25 30
Pro Phe Gly His Ile Leu Leu Ser Trp Arg Thr Arg Phe Lys Thr
35 40 45
Ala Trp Val Gly Lys Leu Glu Ala Ser Trp Met Gln Trp Leu Met
50 55 60
Pro Val Ile Pro Thr Leu Leu Gly Gly Pro Gly Arg Arg Ile Thr
65 70 75
Trp Ala Gln Glu Val Lys Pro Ala Ala Ser
80 85

<210> 90
<211> 85
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:482512.3.orf2:2001JAN12

<400> 90
Ala Leu Glu Arg Lys Ser Cys Leu Trp Ser Ser Met Ile Met Ala
1 5 10 15
Ala Trp Asn Phe Gln Leu Thr Phe Leu Gln Leu Ser Thr Ser Met
20 25 30
Phe Asn His Leu Leu Leu Ser His Tyr Leu Thr Asn Leu Ala Arg

```
                35                  40                  45
Gly Ile Phe Leu Asn Gln Ala Pro Ile Ser Val Phe Phe Leu Cys
                50                  55                  60
Val Pro Asn Phe Val Ile Thr Phe Ser Met Lys Leu Lys Asn Lys
                65                  70                  75
Val Asn Phe Asp Gln Lys Lys Lys Lys Arg
                80                  85

<210> 91
<211> 53
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:413231.6.orf1:2001JAN12

<400> 91
Glu Val Glu Val Lys Glu Trp Ile Leu Glu Phe Glu Asp Phe Glu
  1               5                  10                  15
Val Gln Leu Leu Gln Val Gln Leu Ile Leu Ser Arg Cys Cys Thr
                20                  25                  30
Arg Pro Met Ile Phe Leu Leu Val Glu Asp Gly Gly Glu Tyr Ile
                35                  40                  45
Thr Trp Pro Asn Asn Arg Ala Ser
                50

<210> 92
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:203383.1.orf1:2001JAN12

<400> 92
Tyr Ala Phe Pro Asn Asn Lys Gly His Glu Ser Leu Gly His Val
  1               5                  10                  15
Thr Glu Ser Phe Ser Lys Ile Gln Lys Lys Ile Ile Asn Met Asn
                20                  25                  30
Ser His Ser Met Pro Arg Ser Leu Phe Met Glu Pro Gly Met Val
                35                  40                  45
Asp Leu Leu Ser Met Ser Gln Asn Ile Ser Pro Tyr Lys Asn Pro
                50                  55                  60
Met Arg Phe Ile Phe Phe Ser Pro Ile Leu Arg Glu Glu Lys Phe
                65                  70                  75
Ser Ser Glu Ser Cys Arg Asn Ile Gly Asp Ile Ser Lys Ser Gln
                80                  85                  90
Pro Ile Gly Gly Ser His Gln Cys Val Leu Glu Gly Thr Asn Ile
                95                 100                 105
Glu Leu Leu Asn Ser Tyr Ser Arg Asn Tyr Gly Ala Val Val Lys
               110                 115                 120
Ser Trp Leu Gly Ala
               125
```

<210> 93
<211> 123
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:133186.4.orf3:2001JAN12

<400> 93
Leu His Val Phe Phe Pro Phe Trp Lys Gly Gly Arg Asp Ser Glu
1 5 10 15
Ala Phe Leu Val Phe Phe Arg Pro Ala Pro Ser Phe Leu Asn Ser
20 25 30
Phe Phe Cys Cys Phe Leu Ser Pro Leu Leu Leu Ser Met Ala Val
35 40 45
Ile Leu Leu Glu Ser Lys Gln Ser Val Val Trp Ser Arg Val Cys
50 55 60
Gly Phe Ser Gly Pro Ile Ile Met Ala Ala Ser Glu Ser Glu Glu
65 70 75
Ser His Arg Ala Val Gly Glu Leu Leu Leu Pro Ser Pro Ser Pro
80 85 90
Phe Val Ala Pro Thr Leu Ala Ala Tyr Phe Cys Ser Ser Ala Gly
95 100 105
Glu Ser Val Trp Ala Ser Ser Ser Pro Ser Leu Ser Pro Cys Tyr
110 115 120
Phe Met Gly

<210> 94
<211> 114
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:238576.2.orf1:2001JAN12

<220>
<221> unsure
<222> 32
<223> unknown or other

<400> 94
Glu Lys Gly Val Pro Leu Tyr Gly Arg Gly Ser Gln Lys Pro Gln
1 5 10 15
Asp Leu Ile Leu Lys Thr Pro Pro Arg Pro Gln Gly Ala Arg Gly
20 25 30
Pro Xaa Leu Pro Gly Glu Gln Glu Gly Gly Phe Gln Pro Phe Gly
35 40 45
Asp Thr Gly Gly Phe His Leu Leu Ile Trp Cys Trp Cys Phe Ser
50 55 60
Leu Leu Ala Phe Ser Ser Pro Ser Phe Asn Ala His Gly Ala Phe
65 70 75
Pro Pro Gly Val Gln Gly Val Asp Leu Gly Gln Gly Ser Pro Ser
80 85 90

```
Leu Gln Leu Gly Arg Ile Pro Ser Phe Leu Phe Leu Ala Ile Val
                95                  100                 105
Leu Leu Val Phe Gly Cys Ser Val Ile
                110
```

<210> 95
<211> 110
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:903914.3.orf2:2001JAN12

<400> 95

```
Ser Phe Thr Leu Ser Pro Arg Leu Glu Cys Ser Gly Thr Ile Phe
 1               5                  10                  15
Ala His Cys Asn Leu Cys Leu Leu Gly Ser Ser Asp Ser Arg Ala
                20                  25                  30
Pro Ala Ser Arg Val Ala Gly Thr Thr Gly Thr Cys His His Ala
                35                  40                  45
Gln Leu Ile Phe Ile Phe Leu Val Glu Thr Gly Phe Cys Cys Val
                50                  55                  60
Gly Gln Ala Gly Leu Lys Leu Leu Thr Ser Ser Asn Pro Pro Gly
                65                  70                  75
Leu Leu Phe Ser Cys Leu Asn Met Ala Cys Leu Leu Val Ser Leu
                80                  85                  90
Phe Ser Tyr Ser Leu Tyr Val Gln Glu Ile Thr Phe Trp His Val
                95                  100                 105
Leu Trp Arg Cys Cys
                110
```

<210> 96
<211> 100
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:150817.1.orf2:2001JAN12

<400> 96

```
Thr Leu Tyr Leu Tyr Glu Val Gly Ile Ile Ile Glu Pro Met Leu
 1               5                  10                  15
Trp Arg Lys Leu Lys Leu Lys Lys Asp Arg Pro Gly Val Val Ala
                20                  25                  30
Tyr Thr Cys Ser Leu Ser Thr Leu Gly Gly Gly Gly Gly Gln Ile
                35                  40                  45
Ile Arg Ser Arg Asp Arg Asp His Pro Gly Gln His Gly Lys Thr
                50                  55                  60
Pro Ser Leu Leu Lys Ile Gln Lys Lys Ile Ser Trp Ala Trp Trp
                65                  70                  75
His Val Pro Val Ile Pro Ala Thr Trp Glu Ala Glu Ala Gly Glu
                80                  85                  90
Ser Leu Glu Phe Gly Arg Gln Arg Leu Gln
                95                  100
```

<210> 97
<211> 92
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:219627.1.orf3:2001JAN12

<400> 97
Trp Gly Cys Gly Ser Ala Ala Ile Ser Asn Arg Asp His Gly Gly
1 5 10 15
Pro Gln Thr Ser Ala Pro Glu Arg Gln Phe Gln Ser Tyr Trp Gly
20 25 30
Asp Ala Gly Ile Trp Val Ala Ala His His Gln Gly Arg Val Leu
35 40 45
Ser Ala Ala Leu Glu Cys Arg Val Pro Ile Ser Ser Ala Val Arg
50 55 60
Gly Thr Trp Gly Ser Ser Gly Glu Asp Ser Trp Ser Leu Asp Asp
65 70 75
Asn Thr Pro Leu Pro Thr Ser Pro Ala Phe Pro Val Thr Leu Cys
80 85 90
His Leu

<210> 98
<211> 57
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:197812.4.orf3:2001JAN12

<400> 98
Ile Leu Trp Lys Met Ala Phe Ser Asp Leu Thr Ser Arg Thr Val
1 5 10 15
His Leu Tyr Asp Asn Trp Ile Lys Asp Ala Glu Leu Glu Ser His
20 25 30
Val Gln Asp Leu Arg Cys Val Leu Lys Ile Leu Asn Tyr Gly Lys
35 40 45
Lys Leu Phe Ile Leu Lys Leu Phe Tyr Ser Ala Ser
50 55

<210> 99
<211> 60
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:101525.1.orf2:2001JAN12

<400> 99
Leu Met Pro Val Ile Pro Val Pro Trp Glu Ala Lys Ala Ala Asp
1 5 10 15

Cys Leu Ser Leu Gly Val Gln Asn Gln Leu Gly Gln His Gly Glu
20 25 30
Thr Ser Phe Leu Gln Lys Ile Gln Lys Leu Ser Gln Val Trp Trp
35 40 45
His Val Pro Val Val Pro Ala Thr Trp Glu Ala Glu Val Gly Gly
50 55 60

<210> 100
<211> 144
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:891123.1.orf3:2001JAN12

<400> 100
Phe Pro Pro Val Gln Ala Glu Ser Gly Trp Ser Gly Cys Arg Ala
1 5 10 15
Thr Ile Arg Pro Trp Ser Thr Phe Val Asp Gln Gln Arg Leu Leu
20 25 30
Thr Ala His Ala Thr Trp Glu Thr Cys Ala Ser Ala Ser Tyr Cys
35 40 45
Asn Val Glu Ser Leu Pro Glu Gln Leu Cys Ser Ser Met Leu Pro
50 55 60
Gly Pro His Ala Cys Thr Val Leu Val Asn Val Pro Leu Cys Tyr
65 70 75
Ala Glu Trp Leu Leu Asp Cys Leu Leu Ser Arg Arg Pro Gly Tyr
80 85 90
His Ile Ile Ile Met Leu Arg His Pro Trp Ser Pro Ser Leu Cys
95 100 105
Ser Ile Gly Arg Glu Asp Asp Ala Pro Asp Ala Ser Val Cys Ser
110 115 120
Gly His Gly Gly Ile Ser Phe Pro Phe Phe Trp Val Trp Leu Val
125 130 135
Arg Gly Ser Ala Cys Leu Leu Gly Cys
140

<210> 101
<211> 64
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:813500.1.orf1:2001JAN12

<400> 101
Thr Tyr Val Gly Asn Cys Arg Ser Cys Arg Arg Gly Leu Thr Asn
1 5 10 15
Gly Thr Phe Val Gly Ile Lys Met Val Gln Val Tyr Ala Trp Lys
20 25 30
Leu Ser Leu Pro Leu Asn Val His Leu Lys Ser Arg Gln Arg Lys
35 40 45
Cys Val Glu Thr Gly Gln His Val Gln Gly Trp Leu Val Gln Trp

```
                50                  55                  60
Ala Val Thr Thr


<210> 102
<211> 95
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1037251.1.orf1:2001JAN12

<400> 102
Gln Gly Leu Pro Phe Thr Leu Gly Thr Leu Leu Ile Phe Ser Leu
  1               5                  10                  15
Cys Pro Ser Pro Pro Leu Pro Ser Gln Trp Leu Val Cys Gly Lys
                 20                  25                  30
His Ile Ser Ser Ser Cys Asp Phe Met Ser Leu Asn Gln Arg Met
                 35                  40                  45
Lys Arg Leu Val Ser Ala Met Met Cys Gly Ile Arg Trp Pro Phe
                 50                  55                  60
Pro Trp Thr Ser Leu Glu Pro Cys Leu His Ile Val Pro Asp Thr
                 65                  70                  75
Val Ile Pro Gly Leu Pro Ser Pro Phe Leu Ser Phe Leu His Gly
                 80                  85                  90
His Ser Ser Pro Leu
                 95

<210> 103
<211> 135
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:2032187.1.orf2:2001JAN12

<400> 103
Ser Leu Pro Leu Asp Ser Val Gln Pro Cys Ile Phe Leu Glu Val
  1               5                  10                  15
Asp Pro Arg Ser Gly Ser Asp Gly His Ile Ser Arg Thr Tyr Val
                 20                  25                  30
Val Thr Asp His Val Ser Leu Gln Lys Ser Ile Pro Ala Thr Cys
                 35                  40                  45
Val Ala Ser Ser Asp Gly Asp Leu Ser Gly Ser Leu Trp Phe Pro
                 50                  55                  60
Ser Gln Pro Glu Gln Gly Pro Ser Ile Pro Val Ile Ser Ser Met
                 65                  70                  75
Leu Ile Gly Val Cys Trp Asn Pro Lys Pro Leu Pro Arg Leu Gln
                 80                  85                  90
Ala Pro Asp Gly His Ala Leu Arg Val Thr Phe Ala Met Glu Lys
                 95                 100                 105
Arg His Cys Val Ser Arg Arg Pro Phe Thr Trp Leu His Ala Leu
                110                 115                 120
His Pro Trp Ser Cys Ala His Ala Ser Ser Pro Thr Val Val Pro
```

125 130 135

<210> 104
<211> 90
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:347572.1.orf3:2001JAN12

<400> 104
```
Arg Ser Ser Met Lys Leu Leu Gly Asn Thr His Val Asn Phe Leu
 1               5                  10                  15
Leu Ala Thr Pro Lys His Phe Thr Gln Ser Thr Val Leu Phe Cys
                20                  25                  30
His Pro Ser Phe Gln Arg Thr Thr Met Asn Thr Glu Thr Lys Leu
                35                  40                  45
Pro Ala Gln Thr Gln His Ser Arg Leu Leu Gly Thr Leu Pro Phe
                50                  55                  60
Thr Tyr Thr Val Arg Glu Arg Gly Gly Gly Trp Ser Leu Lys Gly
                65                  70                  75
Thr Ile Pro Gln Glu Thr Ser Trp Met Lys Thr Val Val Gly Arg
                80                  85                  90
```

<210> 105
<211> 153
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:007788.1.orf1:2001JAN12

<400> 105
```
Gln Thr Met Pro Leu Lys Asp Lys Ile Thr Pro Ser Leu Arg Asn
 1               5                  10                  15
Met Pro Val Asn Pro Leu Thr Pro Pro Gly Ile Pro Gln Arg Cys
                20                  25                  30
Thr Ser Tyr Thr His Trp Glu Ile Thr Gln Arg Arg Gly Thr Gln
                35                  40                  45
Lys Thr Arg Ser Thr Gln Leu Gly Val Arg Glu Asp Asp Arg Pro
                50                  55                  60
Ser Ser Ile Ile Pro Phe His Ile Leu Ile Ser Cys Arg Leu His
                65                  70                  75
Leu Tyr Leu Ser Leu Phe Phe Glu Phe Ile Leu Leu Phe Tyr Tyr
                80                  85                  90
Leu Val Tyr Trp Thr Arg Gly Leu His Arg Arg Glu Glu Leu Arg
                95                 100                 105
Ala Pro Gln Lys Arg Ser Val Cys Phe Pro Val Leu Pro Arg His
               110                 115                 120
His Ser Cys Glu Val Ala Ser Leu Glu Val Gly Tyr Glu Glu Pro
               125                 130                 135
Pro Trp Glu Ser Trp Ile Ala Phe Thr Leu Pro Gly Gly Gly Ala
```

140 145 150
Tyr Ile Pro

<210> 106
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:336872.1.orf2:2001JAN12

<400> 106
Gly Pro Gln Thr His Phe Ser Lys His Pro Phe Ser Tyr Glu Asn
1 5 10 15
Thr Gly Gly Arg Val Ser Phe His Leu Trp Val Ser Ile Phe Ile
20 25 30
Phe Glu Thr Gly Ser Gln Ser Val Thr Gln Pro Val Ile Ala Pro
35 40 45
Leu His Ser Ser Leu Gly Asn Arg Val Arg Leu Ser Leu Lys Lys
50 55 60
Lys Gly Arg Leu Asn Phe Tyr Phe Ile Phe Thr Pro Asn
65 70

<210> 107
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:336872.1.orf3:2001JAN12

<400> 107
Asn Gln Lys His Met Cys Thr Val Lys Phe Leu Asp Cys Arg Arg
1 5 10 15
Arg Leu Thr Ser His Ser Gln Pro Leu Ser Pro Leu Asn Cys Ser
20 25 30
His Glu Asp Leu Arg His Thr Ser Leu Asn Thr Pro Phe His Met
35 40 45
Lys Ile Leu Glu Ala Glu Cys Pro Ser Ile Cys Gly Phe Leu Phe
50 55 60
Leu Phe Leu Arg Gln Asp Leu Ser Leu Ser Pro Ser Leu
65 70

<210> 108
<211> 197
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1143291.1.orf2:2001JAN12

<400> 108

Ala Trp Arg Ser Cys Ser Gln Arg Ser Glu Ala Gly Arg Gly Glu
1 5 10 15
Arg Ser Arg Gln Arg Ile Thr Val His Lys Glu Ala Gly Ser Cys
20 25 30
Ser Leu Thr Trp Gly Asn Leu Leu Gly Val Arg Thr Gly Asn Pro
35 40 45
Pro Asp Arg Asp Ser Arg Cys Ala Gly Pro Asn Ala Gly Gly Arg
50 55 60
Ala Tyr Met Ala Leu Gly Ala Gly Gln Ser Arg Asn Leu Leu Ile
65 70 75
Asn Gln Leu Trp Gln Ser Ala Gln Arg Glu Arg Val Glu Arg Gly
80 85 90
Asp Lys Trp Arg Gly Cys Arg Ser Pro Pro His Ala Cys Arg Glu
95 100 105
Arg Ser Leu Ser Pro Arg Pro Arg Pro Leu Thr Arg Trp Gln Gln
110 115 120
Phe Ala Ala Pro Gln Gly His Pro Val Pro Arg Arg Arg Pro Thr
125 130 135
Trp Cys Gly Asp Glu Val Ser Gly Leu Val Ala Ala Ala Leu Gly
140 145 150
Ala Thr Ser Ala Ser Arg Asp Asp Thr Lys Glu Trp Leu Ile Glu
155 160 165
Val Pro Gly Asn Cys Arg Pro Leu Gly Gly Pro Val Arg Gln Ala
170 175 180
Asp Ser Gly Gln Glu Gly Lys Gly Gly Gln Glu Arg Ala Glu Pro
185 190 195
Ala Ala

<210> 109
<211> 81
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:093477.1.orf1:2001JAN12

<400> 109
Asn Cys His Leu Ile Cys Arg Ser Gln Lys Gln Met Lys Arg Ser
1 5 10 15
Phe Thr Ile Ser Arg Asp Glu Lys Glu Cys Cys Phe Leu Phe Phe
20 25 30
Leu Ser Ala Leu Phe Ser Leu Gly Lys Glu Asn Glu Leu Met Leu
35 40 45
Gly Ser Phe Phe Arg Ile Leu Ser Gly Ser Glu Leu Trp Glu Ala
50 55 60
Ser Ile Leu Leu Ser Gln Gly His Val Glu Leu Phe Pro Pro Arg
65 70 75
Pro Pro Asp Trp His Gly
80

<210> 110
<211> 257
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:222105.1.orf2:2001JAN12

<400> 110
Thr Ala Gln Pro Leu Arg Val Pro Ala Thr Ala Gly Glu Pro Gly
1 5 10 15
Lys Gln Gln Pro His Arg Ala Thr Ala Gln Arg Pro Gly Gly Pro
20 25 30
Lys Arg Leu Pro Gln Thr Asn Thr Arg Gly Gly Thr Pro Arg Ala
35 40 45
Glu Pro Ser Glu Pro Gln Phe Phe Phe Ser Gly Gly Val Gly Glu
50 55 60
Arg Leu Gly Val Glu Arg His Gly Gly Ala Gly Tyr Gly Ala Ala
65 70 75
Gln Pro Gly Gly Val Ala Glu Ala Arg Gln Leu Thr Val Pro Pro
80 85 90
Asn Leu Leu Ser Ala Asp Arg Cys Leu Thr Ala Arg Pro Ala Leu
95 100 105
Arg Tyr Ser Pro His Ala Pro Ser Pro Gly Gln Arg Cys Gly Pro
110 115 120
Pro Glu Cys Arg Ala Pro Ser Arg Gly Leu Leu Arg Gly Pro Cys
125 130 135
Leu Ser Leu Gly Ser Thr Pro Gly Val Ser Ala Thr Ser Ser Ser
140 145 150
Ala Ser Ser Ser Thr Ser Ser Ser Val Val Arg Trp Trp Ala Trp
155 160 165
Val Leu Gly Gly Lys Arg Pro Gly Ser Val Ser Ser Thr Asp Gln
170 175 180
Glu Arg Glu Leu Lys Glu Lys Gln Arg Asn Ala Glu Ala Leu Ala
185 190 195
Glu Leu Ser Glu Glu Pro Ala Gln Pro Arg Pro Arg Ser Gly Pro
200 205 210
Ala Ser Pro Arg Trp Ser Ala Thr Arg Cys Ser Arg Trp Gln Ala
215 220 225
Ala Arg Pro Thr Arg Phe Ala Ser Arg Arg Thr Thr Arg Cys Trp
230 235 240
Ala Ala Phe Ser Pro Ser Thr Pro Ser Pro Ser Pro Ala Trp Thr
245 250 255
Thr Asn

<210> 111
<211> 208
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:816737.2.orf3:2001JAN12

<400> 111
Gly Leu Pro Met Glu Glu Glu Asp Gly Gly Gly Ala Arg Gly Glu
1 5 10 15
Val Leu Thr Val Glu Arg Gly Ser Gly Ser Gly Gly Gly Gly Thr
20 25 30

Arg Arg Arg Trp Pro Ala Pro Ala Ala Gly Ala Asp Lys Lys Ala
35 40 45
Val Ala Leu Arg Glu Trp Ala Gly Gly Arg Gly Gly Val Arg Gly
50 55 60
Pro Gln Glu Tyr Val Arg Gly Cys Thr Glu His Gly Val Ala Gly
65 70 75
Ala Cys Asn Arg Ala Cys Ser Val Cys Thr Ser Lys Leu Tyr Leu
80 85 90
Leu Ala Pro Arg Ser Val Leu Ala Leu Gly Thr Gly Ser Gly Trp
95 100 105
Arg Cys Leu Ala Gln Pro Ser Leu Pro Gln Val Leu Ala Ala Ala
110 115 120
Arg Asp Ser Arg Ser Gly Met Pro Pro Ala Val Gly Arg Asn Arg
125 130 135
Arg Leu Pro Pro Val Thr Arg Ala Gly Gly Val Cys Ala Cys Pro
140 145 150
Ala Ala His His Ala Glu Cys Ala Gly Arg Ala Asp Gly Ser Phe
155 160 165
Leu Gly Arg Lys Ser Cys Leu Cys Ile Trp Ala Leu Val Asn His
170 175 180
Arg Gly Gly Ala Gly Thr Pro Ala Ser Gln Asp Met Arg Glu Pro
185 190 195
Arg Gly Val Val Tyr Arg Pro Trp Ala Ile Leu Tyr His
200 205

<210> 112
<211> 177
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:475524.1.orf2:2001JAN12

<400> 112
Arg His Arg Phe Phe Lys Thr Pro Ala Ser Ala Pro Val Pro Thr
1 5 10 15
Leu Gly Leu Gly Ile Ser Arg Tyr Leu Leu Arg Ser Gly Ser Ser
20 25 30
Phe Asn Leu Ala Met Ala Ser Ala Trp Asn Ala Asp Pro Trp Glu
35 40 45
Gly Ser Val Leu Thr Leu Leu Gly Leu Gly Glu Trp Pro Trp Ser
50 55 60
Pro Val Pro Cys Pro Cys Gly Lys Val Thr Ala Phe Ile Cys Ala
65 70 75
Thr Ala Ser Trp Trp Pro Arg Cys Val Trp Glu Gly Leu Val Asp
80 85 90
Val Leu Ala Trp Cys Arg Ala Pro Ala Arg Ser Lys Cys Lys Val
95 100 105
Val Leu Thr His Leu Leu Ala Leu Pro Gln Asp Leu Arg Gly Cys
110 115 120
Thr Cys Pro Leu Ser Ala Ser Pro Ser Ser Val Ala Leu Phe Arg
125 130 135
Leu Ala Trp Ser Asn His Ala Gly Gly Gln Cys Cys Thr Thr Cys
140 145 150
Val Gly Trp Thr Thr Gly Phe Gln Arg Pro Cys Leu Val Leu Asn

```
                155                 160                 165
Leu Trp Asp Leu Ser Phe Val Ile Ser Gly Gly Pro
                170                 175

&lt;210&gt; 113
&lt;211&gt; 129
&lt;212&gt; PRT
&lt;213&gt; Homo sapiens

&lt;220&gt;
&lt;221&gt; misc_feature
&lt;223&gt; Incyte ID No: LI:383639.1.orf1:2001JAN12

&lt;400&gt; 113
Ala Ala Ala Ala Glu Lys Leu Glu Met Gly Thr Ala Leu Asp Ile
  1               5                  10                  15
Lys Ile Lys Arg Ala Asn Lys Val Tyr His Ala Gly Glu Val Leu
                 20                  25                  30
Ser Gly Val Val Val Ile Ser Ser Lys Asp Ser Val Gln His Gln
                 35                  40                  45
Glu Val Ser Leu Thr Met Glu Gly Thr Val Asn Leu Gln Leu Ser
                 50                  55                  60
Ala Lys Ser Val Gly Val Phe Glu Ala Phe Tyr Asn Ser Val Lys
                 65                  70                  75
Pro Ile Gln Ile Ile Asn Ser Thr Ile Glu Met Val Lys Pro Gly
                 80                  85                  90
Lys Phe Pro Ser Gly Lys Thr Glu Ile Pro Phe Glu Phe Pro Leu
                 95                 100                 105
His Leu Lys Gly Asn Lys Val Leu Tyr Glu Thr Tyr His Gly Val
                110                 115                 120
Phe Val Asn Ile Gln Val Arg Ala Ser
                125

&lt;210&gt; 114
&lt;211&gt; 91
&lt;212&gt; PRT
&lt;213&gt; Homo sapiens

&lt;220&gt;
&lt;221&gt; misc_feature
&lt;223&gt; Incyte ID No: LI:814346.1.orf2:2001JAN12

&lt;400&gt; 114
Thr Gly Phe Arg Arg Ala Glu Tyr Ser Asn Asn Asp Gly His Gln
  1               5                  10                  15
Phe Ala Glu Tyr Ser Glu Asn Phe Lys Lys Pro Ile Arg Thr Gln
                 20                  25                  30
Tyr Gly Arg Arg Gly Lys Met Lys Lys Gly Leu Pro Pro Gly Thr
                 35                  40                  45
Glu Asp Ile Trp Ser Cys Asn Arg Gln Thr Val Glu Val Lys Thr
                 50                  55                  60
Lys Glu Glu Gln Thr Glu Asn Thr Trp Lys Trp Thr Met Val Ala
                 65                  70                  75
Val Pro Val Arg Pro Pro Gln Pro Pro Arg Lys Glu Lys Gly Pro
                 80                  85                  90
Arg
```

<210> 115
<211> 122
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:898195.6.orf2:2001JAN12

<400> 115
Thr Glu Glu Ala Ala Ala Glu Lys Lys Val Ser Glu Pro Val Ser
1 5 10 15
Glu Pro Val Thr Leu Glu Gln Gly Thr Ala Asp Ser Ala Pro Gly
20 25 30
Leu Ala Ser Gln Ile Cys Gly Pro Lys Leu Leu Ser Cys Pro Met
35 40 45
Gly Ser Gly Arg Ser Pro Val Ser Arg Arg Arg Glu Glu Thr Val
50 55 60
Gly Ala Leu Gly Pro Gly Leu Ala Glu Arg Gln Ser Ala Leu Ser
65 70 75
Leu Ala Asp Ser Leu Ser Arg Glu Pro Glu Glu Ala Pro Gly Phe
80 85 90
Val Leu Pro Gly Gly Ala Gly Val Ser His Pro Gly Gln Leu Pro
95 100 105
Gln Thr Val Phe Gly Ile Gln Gly Lys Glu Glu Ser Thr Cys Ala
110 115 120
Pro Ile

<210> 116
<211> 59
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:210497.2.orf3:2001JAN12

<400> 116
Pro Pro Ser Phe Tyr Lys Glu Asp Ala Val Glu Ile Arg Pro Val
1 5 10 15
Pro Glu Cys Pro Lys Glu His Leu Gly Asn Arg Ile Leu Val Lys
20 25 30
Leu Leu Thr Leu Lys Phe Glu Ile Glu Ile Glu Pro Leu Phe Ala
35 40 45
Ser Ile Ala Leu Tyr Asp Val Lys Asp Arg Lys Lys Ile Ser
50 55

<210> 117
<211> 97
<212> PRT
<213> Homo sapiens

<220>

<221> misc_feature
<223> Incyte ID No: LI:110297.4.orf2:2001JAN12

<400> 117
Ala Ile Gly Arg Lys Phe Asp Leu His Val Leu Asp Gln Ser Ile
1 5 10 15
Thr Arg Cys Leu Trp Val Cys Gly Leu Gly Arg Pro Ser Pro Ile
20 25 30
His Ser Phe Ser Ala Leu Gly Thr His Glu Arg Asp Ala Lys Phe
35 40 45
Ser Val Asp Phe Ser Trp Cys Ser Met Gly Glu Ser Gly Val Leu
50 55 60
Cys Ala Tyr Trp Lys Ser Pro Lys Asn Gln Arg Pro Phe Ser Phe
65 70 75
Thr Gly Leu Ile Lys Tyr Ser Pro Thr Phe Lys Ile Gly Arg Val
80 85 90
His Arg Val Ile Gly Glu Thr
95

<210> 118
<211> 172
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:2051312.1.orf1:2001JAN12

<220>
<221> unsure
<222> 154
<223> unknown or other

<400> 118
Ile Phe Leu Thr Leu Ser Val Gln Trp His Ala Ser Lys Glu Asp
1 5 10 15
Ser Thr Ala Lys Ser Ser Cys Cys His Ser Leu Ile Lys Gln Glu
20 25 30
Ser Arg Trp Leu Ile Ser Leu Ser His His Ser Thr Ala Arg Leu
35 40 45
Val Gln Ala Leu Leu Ser Thr Gln Ser Arg Ser Lys Gly Asn Gly
50 55 60
Lys Ser Asn His Arg Thr Gln Ser Ala His Ile Ser Pro Val Thr
65 70 75
Ser Thr Tyr Cys Leu Ser Pro Arg Gln Lys Glu Leu Gln Lys Gln
80 85 90
Leu Glu Glu Lys Arg Glu Lys Leu Lys Arg Glu Glu Glu Arg Arg
95 100 105
Lys Ile Glu Glu Glu Lys Glu Lys Lys Arg Glu Asn Asp Ile Val
110 115 120
Phe Lys Ala Trp Leu Gln Lys Lys Arg Glu Gln Val Leu Glu Met
125 130 135
Arg Arg Ile Pro Arg Ala Lys Glu Ile Glu Asp Met Asn Ser Arg
140 145 150
Gln Glu Asn Xaa Asp Pro Gln Gln Ala Phe Arg Leu Trp Leu Lys
155 160 165

Lys Lys His Glu Glu Gln Met
170

<210> 119
<211> 214
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:350272.2.orf3:2001JAN12

<400> 119
Ala Pro Ala Pro Pro Gly Thr Ala Ala Gly Gly Ser Arg Glu Glu
1 5 10 15
His His Arg Ser Cys Ser Gly Ala Asp Arg Ala Gly Gly Thr Ser
20 25 30
Cys Arg His Cys Gln Lys Pro Ala Glu Ser Glu Ala Pro Ile Arg
35 40 45
Ile Trp Thr Arg Gln Arg Thr Glu His Pro Gly Gln Gly Glu Leu
50 55 60
Leu Glu Ala Pro Ser Ser Ser Ser Cys Pro Leu Pro Asp Gln Ser
65 70 75
His Pro Ala Leu Gln Glu Ser Phe Ser Val Cys Phe Ser Gly Pro
80 85 90
Ser Ile Gln Pro Val Asn Leu Lys Ser Leu Ser Cys Ser Leu Glu
95 100 105
Val Ser Lys Asp Ser Arg Thr Val Thr Val Ser His Arg Pro Thr
110 115 120
Thr Leu Ser Ala Gly Ala Val Lys Arg Phe Ser Thr Lys Pro Gly
125 130 135
Leu Met Phe Pro Arg Pro Cys Leu Leu Glu Lys His Tyr Trp Glu
140 145 150
Val Asp Thr Arg Asn Cys Ser His Trp Ala Ser Trp Gly Gly Phe
155 160 165
Leu Gly Asp Glu Pro Arg Pro Gly Pro Gly Lys Asp Tyr Gly Leu
170 175 180
Leu Val Val Trp Asn Gly Arg Gly Leu Ala Ser Ser Leu His Gly
185 190 195
Thr Trp Ser Arg Lys Leu Ser Leu Ala Gln Thr Asp Leu Gly Trp
200 205 210
Trp Ala Ser Gly

<210> 120
<211> 140
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1085472.4.orf1:2001JAN12

<400> 120
Arg Thr Cys Thr Arg Arg Ser Arg Arg Arg Ala Thr Ala Thr Trp
1 5 10 15

Arg Gly Leu Arg Arg Leu Pro Gly Ala Pro Leu Arg Pro Ala Pro
20 25 30
Arg Arg Arg Thr Glu Arg Gln Trp His Thr Asp Gly Arg Ala Glu
35 40 45
Arg Arg Ala Ala Lys Gly Glu Leu Phe Ala Val Ser Ser Arg Cys
50 55 60
Ser Leu Ser Pro Ser Leu Pro Pro Ser Phe Ala Thr Val Trp Ala
65 70 75
Pro Ser Gly Ile Pro Gly Ala Leu Trp Lys Arg Val Gly Glu Met
80 85 90
Arg Ser Arg Leu Trp Thr Gly Glu Glu Glu Trp Gly Gln Arg Glu
95 100 105
Gln Val Gly Asn Thr Cys Ser Trp Gly Trp Gly Ala Ser Pro Ser
110 115 120
Gly Pro Leu Ser Val Phe Leu Ser Ala Val Glu Gln Thr Cys Gly
125 130 135
Arg Cys Leu Ala Ala
140

<210> 121
<211> 204
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1190272.1.orf2:2001JAN12

<400> 121
Thr Lys Ala Gly Gly Leu Ile Tyr His Val Gly Gln Leu Arg Ala
1 5 10 15
Ile Gly Leu Arg Leu Arg Lys Leu Ser Arg Tyr Thr Arg Trp Ile
20 25 30
Cys Cys Ser Ser Tyr Thr Met Ser Val Trp Leu Val Ala Phe Gly
35 40 45
Gln Arg Asp Gly Ile Arg Val Gly His Ala Val Leu Ala Ile Asn
50 55 60
Gly Met Asp Val Glu Trp Gln Val His Gly Arg Arg Glu Arg Gly
65 70 75
Ala Gly Val Phe Gly Leu Thr Leu Ala Asn Tyr Pro Val Ser Ile
80 85 90
Arg Phe Gly Arg Pro Arg Leu Thr Ser Asn Gln Lys Leu Ile Ala
95 100 105
Gly Pro Pro Cys Ser Thr Arg Ser Leu Pro Ser Arg Ser Gln Asp
110 115 120
Cys Leu Leu Lys Gln Gly Lys Leu Arg Gln Leu Arg Cys Trp Ser
125 130 135
Ala Asp Ser Met Ser Asn Cys Thr Cys Tyr Gln Ile Thr Asp Arg
140 145 150
Asp Gln Val Cys Gly Ser Ser Arg Leu Pro Arg Ala Ser Leu Glu
155 160 165
Leu Gly Phe Ser Ser Pro Lys Arg Leu Tyr Asp Asp Leu Tyr Ser
170 175 180
Asp Ile Leu Pro Leu Ile Glu Cys Ala Val Leu Ile Arg Val Arg
185 190 195
Lys Cys Leu Leu Arg Cys Glu Leu Phe

200

<210> 122
<211> 284
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1086797.1.orf1:2001JAN12

<400> 122
Tyr Gly Leu Phe Asp Ser Pro Val Lys Glu Tyr Leu Thr Val Ile
1 5 10 15
Leu Ile Leu Leu Asn Cys Ile Val Thr Leu Leu Thr Ser Arg Lys
20 25 30
Glu Leu Pro Pro Asn Gly Asp Thr Lys Ser Met Val Tyr Gly Pro
35 40 45
Ser Arg Ala Thr Ser Arg Val Gly Cys Ser Ser Leu Leu Ser Glu
50 55 60
Ser Thr Pro Val Leu His Gln Lys Thr Leu Gln Ala Met Lys Ser
65 70 75
His Ser Glu Lys Ala His Trp Pro Trp Glu Leu Gln Gly Ile Glu
80 85 90
Thr Pro Gln Phe Phe Pro Ser Ser Pro Pro Pro His Ser Pro Leu
95 100 105
Ser His Gly His Ile Pro Ser Ala Ile Val Leu Pro Asn Ala Thr
110 115 120
His Asp Tyr Asn Thr Ser Phe Ser Asn Ser Asn Ala His Lys Ala
125 130 135
Glu Lys Lys Leu Gln Asn Ile Asp His Pro Leu Thr Lys Ser Ser
140 145 150
Ser Lys Arg Asp His Arg Arg Ser Val Asp Ser Arg Asn Thr Leu
155 160 165
Asn Asp Leu Leu Lys His Leu Asn Asp Pro Asn Ser Asn Pro Lys
170 175 180
Ala Ile Met Gly Asp Ile Gln Met Val Thr Pro Glu Leu Asn Ala
185 190 195
Trp Ile Pro Trp Asp Arg Cys Leu Arg Ser His Ala Ile Ser Ala
200 205 210
Pro Asn Arg Glu Ala Ser Leu Tyr Ser Pro Pro Ser Thr Leu Pro
215 220 225
Arg Asn Ser Pro Thr Lys Arg Val Asp Val Pro Thr Thr Pro Gly
230 235 240
Val Pro Met Thr Phe Leu Val Arg Gln Arg Val Tyr Arg Arg Arg
245 250 255
Met Ser Tyr Pro Glu Ala Leu Tyr Ile Cys Tyr Ala Val Lys Leu
260 265 270
Lys Leu Ala Lys Trp Cys Gly Cys Asp Ser Asp Arg Leu Val
275 280

<210> 123
<211> 129
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1144466.1.orf1:2001JAN12

<400> 123
Leu Thr Gln Ser Pro Trp Pro Leu Ala Val Pro Ile Gly Ala Ile
1 5 10 15
Asp Gln Asn Pro Leu Ser Leu Asn Ser Ile Leu Thr Ser Leu Arg
20 25 30
Ile Leu Cys Ile Ser Glu Ala Glu Thr Ser Leu Gly Ile His Leu
35 40 45
Leu Gly Thr Gln Val Arg Ser Pro Tyr Ile Ala Arg Lys Gly Val
50 55 60
Ser Gly Ala Met Pro Thr Phe Pro Ser His Pro Leu Pro Leu Gly
65 70 75
Thr Gly Leu Phe Pro Ile Val His Ile Tyr Pro Tyr Leu Ser Pro
80 85 90
Ile Asn Phe Cys Leu Pro Leu Ser Pro Phe Pro His Val Ser Ser
95 100 105
Ile Leu Pro Gly Phe Lys Ile Ile Phe Thr Gln Leu Ile Cys Glu
110 115 120
Gly Asn Gly Lys Arg Thr Ser Pro Asn
125

<210> 124
<211> 81
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1147914.1.orf3:2001JAN12

<400> 124
Pro Thr Thr Ser Asn Arg Ala Ile Thr Leu Thr Ala Arg Pro Lys
1 5 10 15
Ile Pro Phe Leu Arg Ile Arg Glu Ala Lys Asn Pro Arg Ser Glu
20 25 30
Asn Thr Arg Leu Ala Thr Ile Leu Glu Val Ala Cys Arg His Phe
35 40 45
Gly Ser Asp Leu Pro Pro Phe Trp Lys Gln Pro Thr Ile Ile Leu
50 55 60
Gly Ala Leu Gly Ala Arg Thr Pro Gly Lys His Phe Gly Arg Pro
65 70 75
Ala Lys Gly Pro Pro Arg
80

<210> 125
<211> 129
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:758086.1.orf2:2001JAN12

<400> 125
Trp Lys Val Asn Gly Arg Asn Leu Ser Pro Phe Glu Glu Ile Gly
1 5 10 15
Asn Gln Ser His Phe Val Ala Gln Ala Gly Val Gln Trp His Asn
20 25 30
Leu Ala His Cys Asn His His Leu Pro Gly Ser Ser Asp Pro Pro
35 40 45
Thr Ser Thr Ser Gln Val Ala Gly Ser Ala Gly Val Arg His His
50 55 60
Thr Arg Leu Ile Phe Val Phe Leu Val Gln Lys Glu Phe His His
65 70 75
Val Asp Gln Ala Gly Leu Lys Leu Leu Thr Ser Ser Asp Trp Pro
80 85 90
Thr Trp Ala Ser Gln Ser Ala Gly Ile Thr Gly Val Ser His Cys
95 100 105
Ser Pro Ala Tyr Glu Val Val Phe Ala Val Lys Gln Gln Phe Gly
110 115 120
Asn Glu Ala Phe Leu Arg Ser Ser Val
125

<210> 126
<211> 142
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:765245.5.orf3:2001JAN12

<400> 126
Pro Ala Arg Pro Pro Ala Met Ser Ser Thr Gln Phe Gln Gln Gly
1 5 10 15
Pro Ser Val Arg Ala Val Gly Arg Gly Gln Glu Pro Ala Ser Cys
20 25 30
Pro Asn Met Thr Pro Arg Arg Arg Gln Ser Ser Ala Pro Gly Ser
35 40 45
Arg Glu Leu Asn Gly Leu Ser Lys Arg Pro Arg Ile Pro Glu Gly
50 55 60
Pro Glu Gly Trp Asp Tyr Leu Met His Thr Gln Gly Gln Ala Thr
65 70 75
Thr Arg Val Arg Pro Gln Asp Gln Pro Leu His Ala Glu Leu Ala
80 85 90
Pro Ala Arg Ile Thr Leu Ser Asn Phe Ile Lys Ala Met Val Ser
95 100 105
Tyr Gly Met Asn Pro Val Asp Leu Phe Glu Ala Asn Arg Pro Val
110 115 120
Met Arg Val Gly Thr Met Thr Gln Phe Gln Val Ser Leu Ser Arg
125 130 135
Pro Gly Gly Glu Gly Gln Asp
140

<210> 127
<211> 68
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:335608.2.orf3:2001JAN12

<400> 127
Met Tyr Thr Cys Ile Glu Lys Ala Trp Lys Asn Ala Pro Glu Thr
1 5 10 15
Phe Thr Val Ile Phe Trp Val Gly Ser Asp Lys Arg Ala Leu Pro
20 25 30
Leu Phe Val Met Val Ser Phe Cys Ile Thr Glu Cys Thr Met Tyr
35 40 45
Tyr Leu Cys Lys Lys Phe Tyr Pro His Thr Val Phe Thr Leu Thr
50 55 60
Ile Gly Val Gln Tyr Phe Ile Val
65

<210> 128
<211> 88
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:405795.1.orf3:2001JAN12

<400> 128
Ile Val Ser Lys Thr Val Asn Thr Thr Asp Lys Gln His Phe Pro
1 5 10 15
Lys Val Asn Pro His Ser Lys Leu Gly Lys Val Ser Asn Thr Phe
20 25 30
Lys Lys Gln Ile Tyr Ile Phe Leu Lys Tyr Asp Ala Leu Ala Tyr
35 40 45
Cys Phe Leu Lys Ala Phe Cys Val Trp Ala Phe Phe Tyr Trp Phe
50 55 60
Arg Val Asn Phe Met Gly Ser Met Ser Thr Lys Asn Ser Val Tyr
65 70 75
Ile Tyr Cys Phe Asn Val Thr His Tyr Ile Gly Val Phe
80 85

<210> 129
<211> 85
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:014872.1.orf3:2001JAN12

<400> 129
Asn Leu Lys Lys Ile Met Ile Phe Ala Met Asp Gln Ser Gln Phe
1 5 10 15
Asn Ser Ser Leu Arg Ser Glu Phe Arg Ser Tyr Leu Lys Ala Leu
20 25 30
Pro Leu Leu Glu Ile Arg Ser Lys Asp Leu Ser Asp Asn Ser Ser
35 40 45
Tyr Gly Leu Cys Gly Arg Trp Gln Ile Gln Pro Lys Glu Arg Ser

```
                50                  55                  60
Ser Gly Ile Leu Gln Phe His Ile Lys Leu His Val Ser Met Trp
                65                  70                  75
His Trp Gly Asn Gly Arg Asn Ser Gln Cys
                80                  85
```

<210> 130
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:239245.3.orf3:2001JAN12

<400> 130

```
Ala Pro Ala Val Leu Ser Leu Pro Arg Ala Tyr Pro Trp Gln Pro
  1               5                  10                  15
His Asn Ser Gly Glu Val Leu Tyr Pro Glu Cys Pro His Phe Thr
                 20                  25                  30
Asp Glu Asp Ile Glu Glu Lys Arg Leu Thr Gln Gly Ser His Ser
                 35                  40                  45
Ser Ser Ala Cys Ser Arg Gly Leu Val Gln Cys Val Phe Phe Ala
                 50                  55                  60
Thr Ser Leu Ser Leu Gln Trp Gln Leu Gln Lys Thr Glu Ala Val
                 65                  70                  75
Ala Phe Ile Pro Lys Leu His Pro Gln Arg Lys Pro Gln Glu Gly
                 80                  85                  90
Gly Trp Gly Gln Leu Ile Lys Ser Leu Lys Cys Gln Ala Lys Glu
                 95                 100                 105
Trp Met Pro Pro Val Ile Ile
                110
```

<210> 131
<211> 206
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:142384.5.orf3:2001JAN12

<400> 131

```
Arg Phe Ser Val Val Ala Gly Ala Gly Gly Ser Ser Gly Arg Ser
  1               5                  10                  15
Gly Ser Ala Asp Val Leu Pro Ser Ser Pro Gly Ile Ala Lys Gln
                 20                  25                  30
Arg Trp Arg Arg Val Arg Ala Glu Glu Ala Ala Thr Ala Gly Ala
                 35                  40                  45
Gly Ala Ala Gly Pro Gly Ala Met Gln Leu Leu Leu Val Leu Leu
                 50                  55                  60
Ala Leu Ala Ala Ala Ala Ala Gly Ser Gly Arg Leu Ser Cys Leu
                 65                  70                  75
Asp Val Trp Ala Ala Ala Ala Glu Cys Gly Arg Gly Leu Gly Ala
                 80                  85                  90
Arg Gly Ala Ala Trp Leu Arg Cys Pro Gly Ser Arg Pro Gln Pro
```

```
                95                  100                 105
Leu Pro Thr Gly Pro Arg Cys Ile Ser His Trp Arg Pro His Ala
                110                 115                 120
Gln Leu Arg Leu Gly Arg Thr Ser Ala Pro Ser Arg Ser Val Tyr
                125                 130                 135
Ser Gly Ser Ser Gly Ile Ser Cys Pro Phe Ile Arg Ser Leu Leu
                140                 145                 150
Gln Glu Cys Ser Tyr Val Pro Asp Thr Val Asp Met Thr Lys Ile
                155                 160                 165
His Ala Leu Ile Thr Gly Pro Phe Asp Thr Pro Tyr Glu Gly Gly
                170                 175                 180
Phe Phe Leu Tyr Val Phe Arg Cys Pro Pro Asp Tyr Pro Ile Pro
                185                 190                 195
Pro Thr Ser Gly Gln Thr Asp Asp Asn Gly Gln
                200                 205
```

<210> 132
<211> 56
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:2068768.1.orf3:2001JAN12

<400> 132

```
Ile Leu Met Gly Pro Ala Trp Trp Leu Thr Pro Leu Ile Leu Thr
  1               5                  10                  15
Leu Trp Glu Ala Thr Gly Gly Arg Ile Thr Arg Ser Arg Asp Arg
                 20                  25                  30
Asp His Pro Cys Pro His Gly Glu Thr Pro Ser Leu Leu Lys Met
                 35                  40                  45
Pro Lys Leu Ala Gly Cys Gly Gly Ala Cys Leu
                 50                  55
```

<210> 133
<211> 171
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:2118074.1.orf3:2001JAN12

<400> 133

```
Pro Ser Leu Pro Cys Trp Leu Pro Gly Ala Ala Ala Glu Ser Ser
  1               5                  10                  15
Gly Val Asp Ala Ala Trp Glu Glu Ala Ile Gly Arg Tyr Ile Thr
                 20                  25                  30
Gly Leu Ala Phe Thr Met Ala Gly Gly Arg Pro His Leu Lys Arg
                 35                  40                  45
Ser Phe Ser Ile Ile Pro Cys Phe Val Phe Val Ala Gly Ser Phe
                 50                  55                  60
Cys Tyr Asp Ser Thr Tyr Ala Lys Pro Tyr Pro Gly Pro Glu Ala
                 65                  70                  75
Ala Ser Arg Val Pro Pro Ala Leu Val Tyr Ala Leu Val Thr Ala
```

```
                80                  85                  90
Gly Pro Thr Leu Thr Ile Leu Leu Gly Glu Leu Ala Arg Ala Phe
                95                  100                 105
Phe Pro Ala Pro Pro Ser Ala Val Pro Val Ile Gly Glu Ser Thr
                110                 115                 120
Ile Val Ser Gly Ala Cys Cys Arg Phe Ser Pro Pro Val Arg Arg
                125                 130                 135
Leu Val Arg Phe Leu Gly Val Tyr Ser Phe Gly Leu Phe Thr Thr
                140                 145                 150
Thr Ile Phe Ala Asn Ala Gly Gln Val Val Thr Gly Asn Pro Thr
                155                 160                 165
Pro His Phe Leu Ser Val
                170
```

<210> 134
<211> 101
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1189068.4.orf2:2001JAN12

<400> 134

```
Cys Ser Leu Phe Tyr Lys Ala Phe Leu Leu Pro Asp Arg Asn Trp
 1               5                  10                  15
Leu Met Cys Ser Cys Val Arg Ala Asp Cys Phe Asp Asp Pro Tyr
                20                  25                  30
Ser Trp Ser Pro Leu Tyr Pro Ser Leu Phe Ala Tyr Asn Ile Val
                35                  40                  45
Val Pro Ser His Ser Asp Ala Gly Thr Arg His Val Asp Leu Phe
                50                  55                  60
Leu Ala Asn Glu Met Ser Ile Tyr Met Lys Gln Thr Gly Ser Phe
                65                  70                  75
Lys Gly Gly Leu Pro Ser Cys Ser Leu Pro Val Pro Met Arg Thr
                80                  85                  90
Trp Leu Ile Ser Trp Arg Val Tyr Val Asp Val
                95                  100
```

<210> 135
<211> 186
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:2118704.1.orf1:2001JAN12

<400> 135

```
Gly Ala Leu Arg Pro Gly Arg Cys Thr Val Gly Ala Cys Leu Trp
 1               5                  10                  15
Ser Gly Gln Gly Arg Ser Gln Leu Pro Trp Leu Ala Glu Arg Cys
                20                  25                  30
Gly Gly Arg Gly Ala Gly Gly Asn Gln Gly Cys Ala Trp Gly Ser
                35                  40                  45
Gln Ala Ser Met Ser Ser Gly Trp Val Gly Ala Gly Leu Val Gly
```

```
                50                  55                  60
Pro Ala Leu Gly Glu Ala Ser Pro Cys His Trp Pro Gln Ala Val
                65                  70                  75
Arg Gly Leu Ser Thr Gln Thr Ser Ser Cys Arg Gly Cys Ala Arg
                80                  85                  90
Ser Pro Arg Ser Ala Ser Leu Met Ala Leu Cys Ser Asn Ser Cys
                95                  100                 105
Trp Ala Ser Ala Ala Ser Pro Gln Gly Arg Ala Arg Asp Leu Leu
                110                 115                 120
Pro Thr Met Pro Glu Pro Pro Leu Pro Thr Val Gly Ser Cys Val
                125                 130                 135
Ala Gln Ala Ser Pro Thr Ser Thr Ala Pro Cys Ser Val Ala Pro
                140                 145                 150
Gly Pro Ile Asp Gln Pro Arg Ala Lys Gly Cys Arg Cys Thr Val
                155                 160                 165
Trp Asp Leu Gln Ala Ala Leu Pro Val Ala Leu Val Trp Asp Pro
                170                 175                 180
Leu Gly Glu Ala Ser Trp
                185
```

<210> 136
<211> 95
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:031700.2.orf3:2001JAN12

<400> 136

```
Pro Pro Glu Thr His Ser Ala Leu Ala Leu Thr Cys Leu Leu Ile
  1             5                   10                  15
Gly Gly Trp Leu Leu Arg Ile Met Thr Ser Arg Thr Pro Leu Leu
                20                  25                  30
Val Thr Ala Cys Leu Tyr Tyr Ser Tyr Cys Asn Ser Arg His Leu
                35                  40                  45
Gln Gln Gly Cys Glu Lys Asn Val Lys Asp Gln Tyr Phe His Ile
                50                  55                  60
Ser Gln Val Pro Glu Thr Gln Lys Thr Glu His Pro Pro Arg Val
                65                  70                  75
Ser Gly Ala Arg Ala Gly His Arg Ala His Val Ala Ile Leu Met
                80                  85                  90
Gly Cys Leu Pro Gln
                95
```

<210> 137
<211> 81
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:2120122.1.orf1:2001JAN12

<400> 137

```
Trp Leu Cys Ala Tyr Phe Leu Leu Val Thr Arg Gly Lys Met Phe
```

```
  1               5                   10                  15
Glu Asn Cys Tyr Leu Leu Ile Tyr Lys Asn Val Pro Leu Asn Asn
                 20                  25                  30
Phe Pro Ser Leu Thr Ile Phe Arg Asn Gly Ser Lys Val Leu Pro
                 35                  40                  45
Ile Gly Thr Trp Ile Leu Trp Asp Lys Trp Lys Glu Tyr Asp Thr
                 50                  55                  60
Glu Phe Phe Cys Leu Glu Phe Gln Gly Thr Arg Ala His Tyr Arg
                 65                  70                  75
Leu Lys Phe Cys Ala Val
                 80
```

<210> 138
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:816174.1.orf1:2001JAN12

<220>
<221> unsure
<222> 40, 73
<223> unknown or other

<400> 138

```
Ile Cys Ser Asn Leu Asn Ser Phe Leu Leu Arg Arg Lys Asn Leu
  1               5                   10                  15
Thr Glu Gly His Lys Ala Glu Gly Gly Thr Glu Ala Ser Phe Arg
                 20                  25                  30
Ala Thr Val Lys Val Tyr Tyr Ala Leu Xaa Trp Ala Gln Trp Leu
                 35                  40                  45
Met Pro Val Ile Pro Ala Phe Trp Glu Ala Glu Ala Gly Gly Leu
                 50                  55                  60
Leu Gly Val Gly Ser Ser Arg Pro Ala Trp Pro Ser Xaa
                 65                  70
```

<210> 139
<211> 101
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1189569.11.orf2:2001JAN12

<400> 139

```
Glu Ala Val Ser Asp Val His Phe Val Pro Ser Gln Gly Asn Gly
  1               5                   10                  15
Ser Leu Glu Arg Leu Gly Ser Ala Cys Gly Ser Pro Gln Ser Gly
                 20                  25                  30
Thr Asn Gln Lys Ala Gly Asp Leu Arg Pro Trp His Gln Ala Val
                 35                  40                  45
Leu Pro Pro Gln Pro Gly Asp Ser Leu Gln Leu Asn Asp Ser Tyr
                 50                  55                  60
```

Phe Pro Thr Ser Ile Ile Tyr Pro Ser Ser Ala Gln Ile Lys Trp
65 70 75
Gly Thr Gly Arg Lys Asn Arg Ser His Leu Ile Phe Ala Cys Val
80 85 90
Leu Ile Tyr Arg Ser Lys Lys Val Thr Gly Ser
95 100

<210> 140
<211> 103
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:413584.1.orf1:2001JAN12

<400> 140
Ser Thr Arg Thr Pro Arg Arg Thr Leu Glu Glu Leu Thr Lys Ala
1 5 10 15
Leu Glu Gln Lys Pro Asp Asp Ala Gln Tyr Tyr Cys Gln Arg Ala
20 25 30
Tyr Cys His Ile Leu Leu Gly Asn Tyr Cys Val Ala Val Ala Asp
35 40 45
Ala Lys Lys Ser Leu Glu Leu Asn Pro Asn Asn Ser Thr Ala Met
50 55 60
Leu Arg Lys Gly Ile Cys Glu Tyr His Glu Lys Asn Tyr Ala Ala
65 70 75
Ala Leu Asp Arg Phe Tyr Ser Leu Leu Thr Pro Gln Cys Leu Glu
80 85 90
Gln Cys Leu Gly Cys Ser Arg Tyr Leu Ile Ser Ile Cys
95 100

<210> 141
<211> 94
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:791042.1.orf2:2001JAN12

<400> 141
Ser Cys Val His Arg Thr Ala Ser Leu Ile Pro Pro Leu Pro Pro
1 5 10 15
Gly Ser Cys Lys Tyr Ser Pro Leu Leu Pro Leu Asn Ser Val Val
20 25 30
Phe Arg Arg Thr Val Ile Thr Leu Met Ser Leu Ile His Pro Phe
35 40 45
Ile Leu Leu Gly Leu Ser Ser Leu Pro Tyr Phe Leu Gln Gln Gly
50 55 60
Phe Thr Lys Ser Pro Pro Pro Leu Arg Pro Ser Pro Lys Lys Leu
65 70 75
Val Ile Pro Thr Ile Phe Cys Leu Val Ile Leu Leu Phe Ser Ile
80 85 90
Leu Asn Tyr Leu

<210> 142
<211> 98
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1167140.1.orf3:2001JAN12

<400> 142
Phe Ser Cys Leu Ser Leu Pro Ser Ser Trp Asp Tyr Arg His Glu
1 5 10 15
Pro Pro Leu Pro Ala Leu Leu Asp Tyr Ile Gln Tyr Asn Ser Tyr
20 25 30
Trp Lys Glu Ile Leu Gln Val Arg Ala Met Trp Gln Asn Leu Thr
35 40 45
Thr Leu Leu His Arg Lys Ala Phe Met Phe Glu Lys Asn Tyr Thr
50 55 60
Asn Thr Asp Cys Glu Lys Asp Ile Asn Ile Cys Leu His Leu Asn
65 70 75
Thr Arg Glu Phe Ile Leu Asn Lys Ser Lys Ile Arg Ala Ile Thr
80 85 90
Val Lys Arg Ser Phe Arg Lys Ile
95

<210> 143
<211> 70
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:054831.1.orf2:2001JAN12

<400> 143
Arg His Thr Gln Asp Arg Val Ile Tyr Lys Gly Lys Arg Phe Asp
1 5 10 15
Gly Leu Arg Phe Arg Val Ala Arg Glu Val Ser Gln Ser Trp Gln
20 25 30
Lys Met Lys Glu Glu Gln Arg Asp Val Leu His Glu Ser Val Cys
35 40 45
Ala Glu Lys Leu Pro Phe Ile Lys Pro Ser Asp Phe Met Arg Leu
50 55 60
Ile Tyr Tyr Gln Glu Lys Asp Pro Leu Pro
65 70

<210> 144
<211> 247
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: LI:1175083.1.orf2:2001JAN12

<400> 144

```
Arg Arg Cys Ala Ala Glu Ala Ala Leu Pro Val Cys Gly Lys Ala
 1               5                  10                  15
Gly Ser Thr Pro Gly Arg Arg Val Ala Ala Asp Ile Met Ser Ser
                20                  25                  30
Gly Asn Tyr Gln Gln Ser Glu Ala Leu Ser Lys Pro Thr Phe Ser
                35                  40                  45
Glu Glu Gln Ala Ser Ala Leu Val Glu Ser Val Phe Gly Leu Lys
                50                  55                  60
Val Ser Lys Val Arg Pro Leu Pro Ser Tyr Asp Asp Gln Asn Phe
                65                  70                  75
His Val Tyr Val Ser Lys Thr Lys Asp Gly Pro Thr Glu Tyr Val
                80                  85                  90
Leu Lys Ile Ser Asn Thr Lys Ala Ser Lys Asn Pro Asp Leu Ile
                95                  100                 105
Glu Val Gln Asn His Ile Ile Met Phe Leu Lys Ala Ala Gly Phe
                110                 115                 120
Pro Thr Ala Ser Val Cys His Thr Lys Gly Asp Asn Thr Ala Ser
                125                 130                 135
Leu Val Ser Val Asp Ser Gly Ser Glu Ile Lys Ser Tyr Leu Val
                140                 145                 150
Arg Leu Leu Thr Tyr Leu Pro Gly Arg Pro Ile Ala Glu Leu Pro
                155                 160                 165
Val Ser Pro Gln Leu Leu Tyr Glu Ile Gly Lys Leu Ala Ala Lys
                170                 175                 180
Leu Asp Lys Thr Leu Gln Arg Phe His His Pro Lys Leu Ser Ser
                185                 190                 195
Leu His Arg Glu Asn Phe Ile Trp Asn Leu Lys Asn Val Pro Leu
                200                 205                 210
Leu Glu Lys Tyr Leu Tyr Ala Leu Gly Gln Asn Arg Asn Arg Glu
                215                 220                 225
Ile Val Glu His Val Ile His Leu Phe Lys Glu Glu Val Met Thr
                230                 235                 240
Lys Leu Ser His Phe Arg Glu
                245
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<210> 145
<211> 79
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<400> 145

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Ser Asn Ala Ala Leu Leu Phe Phe Thr Pro Leu Arg Cys Leu Gly
                20                  25                  30
Gly Glu Lys His Lys Ser Gly Leu Arg Ala His Leu Val Ile Val
                35                  40                  45
Leu Ser Leu Glu Leu Asn Tyr Asp Ile Asp Ser Phe Ala His Met
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Phe Phe Ala Asp Leu Leu Leu Ile Ile Thr Leu Leu Ser Cys Tyr
                65                  70                  75
Ile Pro Phe Cys
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<212> PRT
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<400> 146
Gln Tyr Thr Leu Pro Ala Leu Val Ile Met Tyr Phe Val Ile Phe
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Pro His Pro Cys Glu Cys Thr Leu Tyr Asn Thr Pro Ser Pro Pro
20 25 30
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35 40 45
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<400> 147
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Leu Glu Lys Val Ser Glu Val Lys Asp Thr Val Arg Arg Gln Ser
35 40 45
Leu Leu His His Leu Cys Ser Leu Val Leu Gln Thr Arg Pro Glu
50 55 60
Ser Ser Asp Leu Tyr Ser Glu Ile Pro Ala Leu Thr Arg Cys Ala
65 70 75
Lys Val Asp Phe Glu Gln Leu Thr Glu Asn Leu Gly Gln Leu Glu
80 85 90
Arg Arg Ser Arg Ala Ala Glu Glu Ser Leu Arg Ser Leu Ala Lys
95 100 105
His Glu Leu Ala Pro Ala Leu Arg Ala Arg Leu Thr His Phe Leu
110 115 120
Asp Gln Cys Ala Arg Arg Val Ala Met Leu Arg Ile Val His Arg
125 130 135
Arg Val Cys Asn Arg Phe His Ala Phe Leu Leu Tyr Leu Gly Tyr
140 145 150
Thr Pro Gln Ala Ala Arg Glu Val Arg Ile Met Gln Phe Cys His
155 160 165
Thr Leu Arg Glu Phe Ala Leu Glu Tyr Arg Thr Cys Arg Glu Arg
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Val Leu Gln Gln Gln Gln Lys Gln Ala Thr Tyr Arg Glu Arg Asn

185 190 195
Lys Thr Gln Ala Gly Glu Met Leu Thr Val Met Leu Val
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<210> 148
<211> 104
<212> PRT
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<223> Incyte ID No: LI:816379.6.orf2:2001JAN12

<400> 148
Gly Gly Leu Ala Glu Val Arg Lys Cys Ile His Phe Gly Ala Lys
1 5 10 15
Thr Arg Asp Leu Leu Gly Gly Cys Arg Ser Ala Leu Ser Ser Asn
20 25 30
Pro Ala Ser Cys Ile Leu Pro Pro Trp Ser Gln Asp Asp Trp Pro
35 40 45
Asp Ile Thr Ser Asp Leu Arg Pro Ala Ser Ser Ile Ser Gln Ser
50 55 60
Leu Thr Pro Lys Val Pro Ala His Cys Ser Val Leu Asn Asn Cys
65 70 75
Arg Cys Phe Leu Ser Ser Leu Val Ser Met Ser Thr Leu Ile Phe
80 85 90
His Asn Phe Leu Phe Ile Ser Tyr Ser Asp Ile Ala Leu Trp
95 100

<210> 149
<211> 73
<212> PRT
<213> Homo sapiens

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<223> Incyte ID No: LI:2123452.4.orf3:2001JAN12

<400> 149
Ile Leu Ser Pro Thr Thr Ile Ala Asn Ile Pro Phe Leu Ser Ala
1 5 10 15
Gly Gln Phe Phe Cys Gly Asn Lys Tyr Cys Asp Lys Lys Glu Gly
20 25 30
Leu Lys Ser Trp Glu Val Asn Phe Gly Tyr Ile Glu His Gly Glu
35 40 45
Lys Arg Asn Ala Leu Val Lys Leu Arg Leu Cys Gln Glu Cys Ser
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Ile Lys Leu Asn Phe His Arg Gln Glu Lys Arg Met Met
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<212> PRT
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20 25 30
Ala Pro Gln Lys Pro Ala Ser Leu Gly Gly Asp Phe Leu Ala Pro
35 40 45
Trp Ala Leu Ala Arg Gly Pro Tyr Glu Phe Lys Val Phe Phe Ile
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Trp His Tyr Ala Glu His Leu Arg Gly Pro Arg Leu Thr Trp Arg
65 70 75
Val Asn Tyr Trp Arg Leu
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<210> 151
<211> 158
<212> PRT
<213> Homo sapiens

<220>
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<223> Incyte ID No: LI:1089871.1.orf3:2001JAN12

<400> 151
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1 5 10 15
Gly Trp Lys Pro Met Arg Glu Thr Leu Asn Val Asp Ser Ile Phe
20 25 30
Ser Glu Ser Glu Lys Arg Gln His Ser Pro Arg His Lys Pro Asn
35 40 45
Ile Ser Asn Lys Pro Lys Ser Ser Lys Asp Pro Ser Phe Ser Asn
50 55 60
Trp Pro Lys Glu Asn Pro Lys Gln Lys Gly Leu Met Thr Ile Tyr
65 70 75
Glu Asp Glu Met Lys Gln Glu Ile Gly Ser Arg Ser Ser Leu Glu
80 85 90
Ser Asn Gly Lys Gly Ala Glu Lys Asn Lys Gly Leu Val Glu Gly
95 100 105
Lys Val His Gly Asp Asn Trp Gln Met Gln Arg Thr Glu Ser Gly
110 115 120
Tyr Glu Ser Ser Asp His Ile Ser Asn Gly Ser Thr Asn Leu Asp
125 130 135
Ser Pro Val Ile Asp Gly Asn Gly Thr Val Met Asp Ile Ser Gly
140 145 150
Val Lys Glu Thr Val Cys Phe Arg
155

<210> 152
<211> 84
<212> PRT
<213> Homo sapiens

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                 20                  25                  30
Gln Lys Gln Thr Lys Thr Gly Met Thr Asp Thr Ile Cys Thr Tyr
                 35                  40                  45
Leu Tyr Leu Tyr Ile Asn Ile Tyr Lys Glu Ser Tyr Ala His Met
                 50                  55                  60
His Asp Thr Cys Ile Tyr Met Ile His Arg Cys His Thr Trp Leu
                 65                  70                  75
Tyr Ser Asn Gly Tyr Pro Trp Tyr Ala
                 80
```

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60/263,329	19 January 2001 (19.01.2001)	US
60/263,131	19 January 2001 (19.01.2001)	US
60/263,063	19 January 2001 (19.01.2001)	US
60/262,760	19 January 2001 (19.01.2001)	US
60/263,070	19 January 2001 (19.01.2001)	US
60/263,066	19 January 2001 (19.01.2001)	US
60/263,077	19 January 2001 (19.01.2001)	US
60/263/076	19 January 2001 (19.01.2001)	US
60/263/074	19 January 2001 (19.01.2001)	US
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(81) Designated States *(national)*: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM.

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Published:
— *with international search report*

(88) Date of publication of the international search report: 15 January 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SECRETORY MOLECULES

(57) Abstract: The present invention provides purified secretory polynucleotides (sptm). Also encompassed are the polypeptides (SPTM) encoded by sptm. The invention also provides for the use of sptm, or complements, oligonucleotides, or fragments thereof in diagnostic assays. The invention further provides for vectors and host cells containing sptm for the expression of SPTM. The invention additionally provides for the use of isolated and purified SPTM to induce antibodies and to screen libraries of compounds and the use of anti-SPTM antibodies in diagnostic assays. Also provided are microarrays containing sptm and methods of use.

WO 2002/057304 A3

INTERNATIONAL SEARCH REPORT

PCT/US 02/01340

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/47 C07K16/18 G01N33/50 C12N15/12 C12Q1/68
C12N5/10 A01K67/027

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K C12Q G01N A01K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 52165 A (CORIXA CORP ;LODES MICHAEL J (US)) 8 September 2000 (2000-09-08) SEQ ID NO:124 or BR2-29 on page 47 ---	1-28
A	WO 00 52151 A (INCYTE PHARMA INC ;AZIMZAI YALDA (US); YUE HENRY (US); AU YOUNG JA) 8 September 2000 (2000-09-08) SEQ ID NO:1-22 ---	1-28

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
3 June 2003	16 10. 2003

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	ALCONADA RODRIG.., A

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	DATABASE GENESEQ [Online] 15 July 2002 (2002-07-15) MAO,Y. AND XIE,Y.: "cDNA encoding novel human mitochondrial polymerase 13.86" Database accession no. ABK50841 XP002243182 -& DATABASE WPI Section Ch, Week 200237 Derwent Publications Ltd., London, GB; Class B04, AN 2002-330570 XP002243183 abstract & CN 1 329 140 A (SHANGHAI BIODOOR GENE DEV CO LTD) 2 January 2002 (2002-01-02) ---	1-28
P,X	DATABASE GENESEQ [Online] 24 May 2002 (2002-05-24) BIRSE,C.E AND ROSEN, C.A.: "Human polynucleotide SEQ ID NO: 591" Database accession no. ABL90029 XP002243202 -& DATABASE GENESEQ [Online] 24 May 2002 (2002-05-24) BIRSE,C.E. AND ROSEN, C.A.: "Human polypeptide SEQ ID NO 1996" Database accession no. ABB89620 XP002243203 -& WO 01 90304 A (HUMAN GENOME SCIENCES INC, ROSEN CRAIG A (US); BIRSE CHARLES E (US)) 29 November 2001 (2001-11-29) paragraphs [0087],[0093],[0158],[0200],[0331],[0334],[0687],[0706] claims 1-24 -----	1-28

INTERNATIONAL SEARCH REPORT

PCT/US 02/01340

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-28 (in part)

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: Invention 1: claims 1-28 (in part)

An isolated polynucleotide comprising the sequence of SEQ ID NO: 1 and variants thereof, methods for detecting said polynucleotide, host cells and transgenic organisms comprising said polynucleotide, the purified secretory polyeptide of SEQ ID NO:76 which is coded by the above polynucleotide, a method for the recombinant production of said polypeptide; an isolated antibody that binds to said polypeptide, a method of identifying a test compound which specifically binds to said polypeptide, a microarray comprising the polynucleotide of the invention and uses thereof for generating a transcript image of a sample which contains polynucleotides; a method of detecting a compound for efectiveness in altering expression of the claimed polynucleotide; a method for assessing toxicity of a test compound by detecting changes in the amount of the claimed polynucleotide.

2. Claims: Inventions 2-75: claims 1-28 (in part)

As invention 1, but referring to the polynucleotides of SEQ ID NO:2-75 and the corresponding polypeptides of SEQ ID NO:77-152.

INTERNATIONAL SEARCH REPORT

PCT/US 02/01340

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 0052165	A	08-09-2000	AU	3391200 A	21-09-2000
WO 0052151	A	08-09-2000	AU	3393900 A	21-09-2000
			CA	2363684 A	08-09-2000
			EP	1165766 A	02-01-2002
			JP	2002537805 A	12-11-2002